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MISSOURI RIVER COMMISSION ANNUAL REPORT.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

The annual report of the Missouri River Commission for the fiscal year ending June 30, 1886.

DECEMBER 11, 1886.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 8, 1886.

In accordance with the act of Congress approved July 5, 1884, creating the Missouri River Commission, the Secretary of War has the honor to transmit to the House of Representatives the annual report of said commission upon the operations in their charge for the fiscal year ending June 30, 1886.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 2, 1886.

SIR: I have the honor to transmit herewith the annual report of the Missouri River Commission upon the operations in their charge for the fiscal year ending June 30, 1886, which, by the river and harbor act of July 5, 1884, constituting the Commission, is required to be submitted to the Secretary of War through the Chief of Engineers.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WILLIAM C. ENDICOTT,
Secretary of War.

MISSOURI RIVER COMMISSION,
OFFICE OF THE PRESIDENT, 1415 WASHINGTON AVENUE,
Saint Louis, November 20, 1886.

SIR: I have the honor to forward, in a separate package, by mail, to-day, annual report of Missouri River Commission to the honorable Secretary of War for the fiscal year ending June 30, 1886, with financial statement to November 1, 1886, and with appendices, designated as follows:

Appendix A.
Appendix A 1, with Appendices A 1a, and A 1b.
Appendix A 2.
Appendix A 3, with Appendices A 3a, A 3b, and A 3c, A 3d, A 3e, A 3f, A 3g, A 3h, and A 3i.
Appendix A 4.
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Appendix D.

Very respectfully, your obedient servant,

THEO. A. BINGHAM,
First Lieutenant of Engineers, U. S. Army,
Secretary Missouri River Commission.

The CHIEF OF ENGINEERS, U. S. ARMY,
Washington, D. C.

ANNUAL REPORT OF THE MISSOURI RIVER COMMISSION, 1886.

MISSOURI RIVER COMMISSION,
OFFICE OF THE PRESIDENT, 1415 WASHINGTON AVENUE,
Saint Louis, Mo., November 17, 1886.

SIR: The Missouri River Commission beg leave to submit herewith their annual report upon the operations in their charge for the fiscal year ending June 30, 1886.

SURVEYS.

The survey of the Missouri River, which has been in progress for the last eight years, has been carried on by the Commission mainly with funds allotted from the appropriation for improvement, there having been only a small balance remaining from the last specific appropriation for this work.

At the date of the last annual report a surveying party was *en route* for Fort Benton, Montana. On July 4 they began work at this latter point and by October 1 had progressed down-stream a distance of 240 miles to Trover's Point, where operations were closed for the season. The work of this party was preliminary, and consisted of secondary triangulation, levels, and the establishment of permanent bench-marks. During the winter the triangulation work was adjusted and all computations made, and the base line of the previous year's work at Glasgow, Mo., was measured. It had been intended, during the current season, to complete the work near Fort Benton by filling in the topography and

hydrography, but no funds being available for the purpose, the Commission have decided to continue on the lower river the secondary triangulation and establishment of permanent bench-marks, which work it is hoped may be completed between Fort Leavenworth and Glasgow, a distance of 192 miles, during the present season. There will then remain, to complete the work, triangulation from Fort Leavenworth, Kansas, to Trover's Point, Montana, 1,501 miles; topography and hydrography from Fort Pierre, Dakota, to Fort Benton, Montana, 1,100 miles; establishment of permanent bench-marks from Fort Leavenworth, Kansas, to Trover's Point, Montana, and from Boonville, Mo., to the mouth of the river, a total distance of 1,908 miles. The total estimated cost of this much-needed work is \$165,000, and at least \$50,000 should be devoted to it annually till it is completed.

In the office of the Commission, besides the work incidental to the surveys mentioned, progress has been made on the compilation and tabulation of physical data already collected. Eighteen water-gauges have been maintained during the year. The records of all known gauges have been collected and tabulated. They have been, so far as possible, reduced to a common datum plane, the Saint Louis city directrix, and prepared for publication.

For details of this work, see report of the Secretary of the Commission, Appendix A.

CONSTRUCTION.

IMPROVING MISSOURI RIVER FROM SIOUX CITY, IOWA, TO FORT BENTON, MONTANA.

Work has been confined to the upper portion of the river above Carroll, where rapids and rocks mainly obstruct navigation. At Grand Island dams were constructed, as also at Dauphin's Rapids and below Fort Benton, the object in all cases being either to increase the navigable depth over the rapids by damming the water back or to sweep away shoals of sand by concentrating the force of the current. These works have been successful. The new plant ordered for the work has been completed.

From the close of field work in the fall of 1885 to the end of the fiscal year nothing has been done beyond caring for the public property, the appropriation being practically exhausted.

Under recent legislation this work has passed out of the hands of the Commission.

For details of work done, see report of Capt. James B. Quinn, Corps of Engineers, United States Army, Appendix B.

IMPROVING MISSOURI RIVER FROM ITS MOUTH TO SIOUX CITY, IOWA.

In this district work has been carried on in the vicinity of Saint Joseph, Mo., and Kansas City, Mo. At the first place, the object in view was to extend and complete certain works of bank protection constructed in previous years to prevent the formation of a threatened cut-off, while at Kansas City the work was the commencement of a thorough, systematic, and continuous improvement of the lower portion of the river. In the last annual report of the Commission the methods employed were described at length, together with details of the progress made in the early part of the season.

Saint Joseph, Missouri.—After the subsidence of the June rise work at this place was resumed. From July 15 to 20th, 435 cubic yards of rock were placed on those portions of the Elwood revetment repaired in the

spring, and on July 24 work was resumed on the revetment of the left bank in Bonton Bend. This work progressed steadily till October 8, when the mattress work had been carried down-stream a distance of 9,725 feet and partially covered with stone. The boats employed on the work were then hauled out of water for safety during the winter, and were launched again in the spring when the ice had ceased running. Work was then resumed, and the work of placing the rock covering on the upper portion of the bank was completed. In carrying out this work there were used 7,372 cords of brush and 12,605 cubic yards of rock. In grading the banks above water 83,394 cubic yards of earth were removed by the use of a water-jet.

During the season some 2 miles of badly caving bank was substantially revetted and the caving at once stopped. Below the limits of the work, however, the caving has gone on at the same rate as before. To check this and complete the work the revetment must be extended 10,000 feet farther, which it is expected will be done during the spring of 1887. There will still remain the extension of the Elwood revetment to Belmont, about 18,000 feet, which cannot be undertaken till further appropriations are made.

For details of the work attention is invited to the report of Assistant S. Waters Fox, in local charge, Appendix C.

Kansas City, Missouri.—Work at this point consisted in revetting the caving banks in Kaw and Quindaro Bends. Work on Kaw Bend was begun in the spring, and 3,000 feet had been revetted at date of last report. By the end of July all the plant available had arrived on the ground, and on August 3 work was resumed in Kaw Bend. The first 1,300 feet of mattress constructed had a total width of 90 feet from the top of the graded bank, 60 feet being beyond the line of low water. The remaining 6,400 feet had a total width of 110 feet, of which 75 feet was beyond the low-water line. The upper bank was sloped to an average grade of $3\frac{1}{2}$ to 1 by hydraulic graders.

The completion, early in October, of this 7,700 feet of revetment (10,700 during the season), effected a junction with the work of 1882, and completed the protection of the upper portion of Kaw Bend. The working parties were then transferred to Quindaro Bend, on the opposite side of the river. Work here was begun on September 7, and the mattress work was finished October 27. The Quindaro Bend revetment is 9,760 feet long and 135 feet wide, 75 feet being below low-water line. Five mattress-boats were employed, and the maximum force of men aggregated 822. Owing to the failure of the contractor for rock to fulfill the conditions of his contract much trouble and delay were experienced. It was finally found necessary to haul most of the stone needed in wagons, and the work of placing it was carried on during the winter and spring. The Kaw Bend work was finally completed on January 2 and the Quindaro work at the end of April. In the execution of this work 14,159 cords of brush were consumed and 34,608 cubic yards of rock. In grading the banks 75,419 cubic yards of earth were removed by the hydraulic graders. The whole work was of the most thorough and satisfactory character, and promises to afford a complete protection against further encroachments of the river. During the month of December all the boats used on the work were hauled out on the bank for safe-keeping, except the tow-boats, graders, and some other pieces, 28 in all, which were sent into winter quarters at Bushberg, near Saint Louis.

When the ice broke up in the spring a gorge formed in the bend in front of Kansas City, and the water backed up above it, forced its way

through the sand-bar to the north of Pest Island. This channel kept on enlarging during the season till it finally carried the bulk of the water. Unfortunately this channel led under one of the fixed spans of the bridge, and as the bar between it and the bend was too shoal for boats to cross, the bridge during the whole low-water season became the head of navigation. Nothing could be done in the matter; the balance remaining in the hands of the Commission being insufficient to defray the cost of the extensive rectification works required.

Funds from the new appropriation became available too late to enable the Commission to resume work this fall, but all needful preparations will be made to begin as soon as the river is clear of ice in the spring. It is expected that the revetment of the right bank below Kansas City, known as the East Bottom, will be completed, as also the revetment of the left bank, in Sharp's Bend, below Randolph. This work, together with the rectification works in Lower Kaw Bend and at Pest Island, will probably exhaust the current appropriation before the end of the fiscal year.

There will still remain to be done in this vicinity revetment work in Parkville and Little Platte Bends to secure the head of the work, and revetment at Wyandotte and Harlem, when the rectification works have accomplished their object. Continuing down the river from Sharp's Bend, Big Blue and Wayne City bends require revetment with rectification works and revetment of the left bank opposite the mouth of Big Blue River. This, with sufficient funds available, can be completed during the fiscal year ending June 30, 1888, and will carry the finished work to Liberty, Mo., 30 miles from the starting point.

For fuller details of this work, see report of Assistant Samuel H. Yonge, in local charge, Appendix D.

OPERATIONS FOR THE COMING SEASON.

The peculiar wording of the act making appropriation for the improvement of the Lower Missouri River, approved August 5, 1886, has caused the Commission much embarrassment in deciding as to the precise wishes of Congress in the matter. The act appropriates the sum of \$375,000 for continuing the improvement of the Missouri River, including necessary work at Omaha, Atchison, Saint Joseph, Fort Leavenworth Reservation, Arrow Rock, Kansas City, Plattsburgh, Brownville, and Nebraska City, under the direction of the Secretary of War, in accordance with plans and estimates to be furnished by the Missouri River Commission.

The Commission in previous reports have outlined their plan for the improvement of the navigation of the river, which consists essentially in contracting the width of the stream to comparative uniformity, and in fixing the location and direction of the channel by protecting all banks exposed to the erosive action of the current. This work, to have any value, must be thorough and continuous, and after due consideration the Commission decided to begin the work in the vicinity of Kansas City and to carry it on down-stream from that point to the mouth of the river. This plan was approved by the Secretary of War, and work in prosecution thereof has been in active progress during the past season. To continue this work the Commission in their last annual report recommended an appropriation of \$1,000,000. The current act, while materially reducing this estimate, directs that "necessary work" shall also be done at nine specified localities according to plans and estimates to be presented by the Missouri River Commission. What

this necessary work consists in is not stated, but the Commission infer that the protection of land exposed to the encroachments of the river is what was intended. The Commission have no certain knowledge of what the extent of such work in each specified locality may be, but from old reports and maps they infer that at each locality the expenditure of from \$200,000 to \$500,000 will certainly be required. Moreover the experience of the last ten years has amply demonstrated that it is rarely possible to do such work in annual installments. The whole work must be carried through to completion in one season, as otherwise the incomplete work done in one year will in all probability be destroyed before an opportunity is afforded for its resumption. To carry on work simultaneously at all the places designated in the act would require from \$1,000,000 to \$1,500,000, besides \$300,000 or \$400,000 more for the plant needed in its execution. The plant already in the hands of the Commission is not more than adequate for work at one locality, the detail last year of a portion of it to Saint Joseph having been of decided detriment to the main work at Kansas City. As there were, therefore, neither adequate funds nor sufficient plant to carry out the apparent intention of Congress, it seemed obvious to the Commission that, in order that anything should be accomplished, some selection of localities was absolutely necessary. At two of the places designated, Kansas City and Saint Joseph, work had been in progress last year and plans for its further prosecution had been prepared, while the plant required was already on the ground. As these two places are second to none on the river in commercial importance, and as Kansas City, moreover, is in the line of the general improvement, it seemed obvious to the Commission that if any selection were allowable these were the proper points to select. They accordingly recommended to the Secretary of War an allotment of \$260,000 for Kansas City and of \$75,000 for Saint Joseph. They also recommended that \$10,000 be allotted for surveys at the seven other designated localities, the balance of the appropriation, \$30,000, being set aside for the purchase of additional plant. On October 28 these recommendations received the approval of the Secretary of War, but owing to the lateness of the season no field work of any magnitude can be done before spring.

The special surveys have, however, been taken in hand, and as soon as they are completed special reports with plans and estimates will be submitted for the information and action of Congress.

RECOMMENDATIONS.

The Commission renew their recommendation that at least \$1,000,000 be appropriated for continuing the improvement of the river, in addition to any sums which Congress may see fit to devote to work at special localities. With a less sum than this it will be many years before the work will cover a sufficient extent of river to enable a proper estimate to be formed as to its cost and its value to the country. No engineering difficulty has as yet presented itself to suggest any doubt as to the possibility of carrying it to successful completion.

For continuing the survey of the Missouri River, for the examinations and observations required in a thorough study of the problem confided to them, and for salaries, traveling and office expenses, the Commission recommend an appropriation of \$150,000. They also renew their previous recommendation that the \$15,000 appropriated for a survey of the Missouri River above the Missouri River Falls, at Fort Benton, be made available for the general survey of the river.

The recommendations of the Commission for the year ending June 30, 1888, are recapitulated as follows:

(1) Appropriation for the improvement of Missouri River from its mouth to Sioux City.....	\$1,000,000 00
(2) Appropriation for surveys and examinations.....	120,000 00
(3) Appropriation for office and traveling expenses and salaries of Commissioners.....	30,000 00
(4) Reappropriation for general survey of Missouri River of the item of \$15,000 appropriated in the act of July 5, 1884, for survey of the river above the falls.....	15,000 00

Money statement.

Available July 1, 1885, and received since to June 30, 1886:

Appropriation for survey of Missouri River from its mouth to Fort Benton, Montana, act of August 2, 1882.....	\$8,500 00
Appropriation for improving Missouri from its mouth to Sioux City, Iowa, act of July 5, 1884.....	340,928 80
Appropriation for improving Missouri River from Sioux City, Iowa, to Fort Benton, Montana, act of July 5, 1884.....	50,763 37
Appropriation for survey of Missouri River above Missouri River Falls, at Fort Benton, act of July 5, 1884.....	15,000 00
From sales of fuel to officers.....	181 46

Total..... 415,373 63

Expended from July 1, 1885, to June 30, 1886, exclusive of outstanding liabilities, July 1, 1885:

By first district officers.....	\$243,606 19
By second district officer.....	32,938 09
By the Secretary of the Commission.....	39,963 88

Total..... 316,508 16

Outstanding liabilities July 1, 1886:

Of first district officer.....	\$3,072 07
Of second district officer.....	1,091 38
Of the Secretary of the Commission.....	1,655 32

5,818 77

322,326 93

Balance available July 1, 1886..... 93,046 70

Respectfully submitted.

CHARLES R. SUTER,
Major of Engineers, U. S. A.,
President Missouri River Commission.

A. MACKENZIE,
Major of Engineers, U. S. A.

O. H. ERNST,
Major of Engineers, U. S. A.

GARLAND C. BROADHEAD.
WILLIAM J. BROATCH.

Hon. WM. C. ENDICOTT,
Secretary of War, Washington, D. C.
(Through the Chief of Engineers, U. S. Army.)

REPORT OF THE MISSOURI RIVER COMMISSION.

Financial statement from July 1, 1885, to June 30, 1886.

Work.	Resources.				Expenditures.			Unexpended balances June 30, 1886.
	Unexpended balance July 1, 1885, of appropriation, act of August 2, 1882.	Unexpended balances July 1, 1885, of appropriations, act of July 5, 1884.		Received, sales of fuel to officers.	Since July 1, 1885.		Total to June 30, 1886.	
		Allotments.	Unallotted.		Paid.	Unpaid liabilities, June 30, 1886.		
In charge of Secretary: Survey of Missouri River from its mouth to Fort Benton, Montana	\$8,500	.....	.....	.....	\$5,913 37	\$80 00	\$5,993 37	\$2,506 63
<i>From its mouth to Sioux City, Iowa.</i>								
Office and traveling expenses and salaries of Commission		\$9,404 19	.....	\$131 22	8,334 91	438 82	8,773 73	761 68
Surveys and permanent benchmarks		1,326 00	.....	.....	823 28	.....	823 28	502 72
Care of plant, river gauges, physical data		10,436 58	.....	.....	7,905 85	1,090 40	8,996 25	1,440 33
Tow-boat		24,150 00	.....	.....	250 00	.....	250 00	23,900 00
In charge of Major Suter, Corps of Engineers, to May 31, and of Major Livermore, Corps of Engineers, since June 1, 1886:								
Kansas City		*222,821 78	.....	.....	173,979 09	2,020 31	175,999 40	46,822 38
Saint Joseph		72,790 25	.....	.....	69,627 10	1,051 76	70,678 86	2,111 39
<i>From Sioux City, Iowa, to Fort Benton, Mont.</i>								
In charge of Captain Quinn, Corps of Engineers:								
Office and inspection expenses, district officer		†4,033 92	.....	.....	3,388 58	645 34	4,033 92	.....
Work below Fort Benton		21,673 21	.....	.....	21,478 17	195 04	21,673 21	.....
Purchase and repair of plant		8,322 34	.....	.....	8,071 34	251 00	8,322 34	.....
In charge of Secretary:								
Office and Commission expenses		5,000 00	.....	50 24	5,002 57	46 10	5,048 67	1 57
Surveys		11,733 90	.....	.....	11,733 90	.....	11,733 90	.....
<i>Above Fort Benton.</i>								
Survey above falls			\$15,000	.....	.....	.....	.....	15,000 00
Total	8,500	391,692 17	15,000	181 46	316,508 16	5,818 77	322,326 93	93,046 70

* \$2,000 transferred to Saint Joseph allotment.

† \$1,500 transferred to work below Fort Benton; \$251 transferred to purchase and repair of plant.

Financial statement from July 1, 1886, to October 31, 1886.

Work.	Resources.				Expenditures and transfers.			Amounts available November 1, 1886.
	Amounts available July 1, 1886.	Transferred from other allotments.*	Allotments.†	From sales of fuel.	Amounts expended exclusive of outstanding liabilities July 1, 1886.	Outstanding liabilities November 1, 1886.	Transferred to other allotments.	
<i>In charge of Secretary.</i>								
Survey of Missouri River from its mouth to Fort Benton, Montana	\$2, 506 63	.....	.....	.....	\$1, 692 53	\$255 11	.....	\$558 99
Improving Missouri River from its mouth to Sioux City, Iowa:								
Office and traveling expenses and salaries of Commission ..	761 68	\$25, 000	.....	\$50 24	2, 805 35	1, 258 39	.....	21, 748 18
Surveys and permanent benchmarks	502 72	23, 000	.....	.....	4, 536 73	3, 705 07	.....	15, 260 92
Care of plant, river-gauges, physical data	1, 440 33	12, 000	.....	.....	2, 355 25	720 00	.....	10, 365 08
Tow-boat	23, 900 00	.....	.....	.....	.....	.....	\$23, 900	.....
Special surveys .....	.....	.....	\$10, 000	.....	.....	.....	.....	10, 000 00
Improving Missouri River from Sioux City, Iowa, to Fort Benton, Montana:								
Office and Commission expenses.	1 57	.....	.....	.....	1 57	.....	.....	.....
<i>In charge of Maj. W. R. Livermore, Corps of Engineers.</i>								
Improving Missouri River from its mouth to Sioux City, Iowa:								
Kansas City	46, 822 38	.....	260, 000	29 24	10, 556 15	33, 859 20	36, 100	226, 336 27
Saint Joseph	2, 111 39	.....	75, 000	.....	2, 054 49	10, 568 51	.....	64, 488 39
Construction of plant .....	.....	.....	30, 000	.....	.....	.....	.....	30, 000 00
<i>Unallotted.</i>								
Survey of the Missouri River above the Missouri River Falls, at Fort Benton	15, 000 00	.....	.....	.....	.....	.....	.....	15, 000 00
Total	93, 046 70	60, 000	375, 000	79 48	24, 002 07	50, 366 28	60, 000	393, 757 83

* Appropriation, act of July 5, 1884.

† Appropriation, act of August 5, 1886.

Abstract of proposals opened by Capt. J. H. Willard, Corps of Engineers, U. S. A., for Maj. Charles R. Suter, Corps of Engineers, U. S. A., at Saint Louis, Mo., at 12 o'clock m. July 15, 1885, for furnishing and delivering on Government barges 15,000 cubic yards or more of riprap for improvement of Missouri River in the vicinity of Saint Joseph, Mo.*

Number.	Names and addresses of bidders.	Landings where riprap is to be delivered.	Distance from Saint Joseph water-works.		Quantity.	Price per cubic yard.	Charge for towage per cubic yard.†	Comparative price per cubic yard.	Amount.
			Miles up-stream.	Miles down-stream.					
1†	Andrew Sheridan, Saint Joseph, Mo.	Saint Joseph water-works.	.....	.....	<i>Cu. yds.</i> 15,000	<i>Cents.</i> 75	.....	.....	\$11,250 00
2	G. T. Nelles, Leavenworth, Kans.	Four miles below Saint Joseph water-works.	.....	4	15,000	72½	2	74½	11,175 00
3	William J. Hobson, Saint Joseph, Mo.	Mouth of the Nodaway River.	11	.....	15,000	69	2¾	71¾	10,762 50
4	Henry W. Dunn..	One mile above Saint Joseph water-works.	1	.....	15,000	80	¾	80¾	12,037 50

* Major Suter confined to his house by sickness.

† The towage charge added for comparing proposals is at the rate of ½ of 1 cent per cubic yard for towing up-stream, and ¼ of 1 cent per cubic yard per mile for towing down-stream, distance measured from Saint Joseph water-works.

‡ Informal.

Abstract of contracts for improvement of Missouri River from its mouth to Sioux City, Iowa, in force during the fiscal year ending June 30, 1886.

Contractors' names and residences.	Subject of contract.	Date of contract.	Riprap-stone per cubic yard.
T. M. Hackett & Son, Atchison, Kans.*.	50,000 cubic yards riprap stone, for use on work at and near Kansas City, Mo.	1885. July 13	<i>Cents.</i> 69½
William J. Hobson, Saint Joseph, Mo.†..	15,000 cubic yards riprap stone, for use on work at and near Saint Joseph, Mo.	Aug. 4	69

* Contract annulled October 24, 1885.

† Contract closed May 13, 1886.

APPENDIX A.

ANNUAL REPORT OF SECRETARY.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., June 30, 1886.

SIR: I have the honor to forward herewith annual report of the Secretary of the Commission, with accompanying appendices, drawings, and photographs; also itemized statements of expenditures by the Secretary, and financial statement of the Commission for the past fiscal year.

Very respectfully, your obedient servant,

THEO. A. BINGHAM,
First Lieutenant of Engineers, U. S. A.,
Secretary Missouri River Commission.

Maj. CHARLES R. SEUTR,
Corps of Engineers, U. S. Army,
President Missouri River Commission.

ADDITIONAL SURVEYS AND ESTABLISHMENT OF PERMANENT BENCH-MARKS BELOW
SIOUX CITY. (SECONDARY TRIANGULATION.)

No work has been done since last annual report, except to measure a base-line at Glasgow, which was done in November, 1885.

Full details of this measurement are given in my report to you dated March 6, 1886, copy herewith. (Appendix A 1.)

The field work covers the river as far up as Glasgow. The notes are complete and awaiting computation, for which the balance available is not sufficient by \$1,200.

The report above referred to contains itemized statement of expenditures in the field and a photograph of one of the triangulation stations ready for work.

ADDITIONAL SURVEYS AND ESTABLISHMENT OF PERMANENT BENCH-MARKS ABOVE
SIOUX CITY. (SECONDARY TRIANGULATION.)

At date of last annual report the party had not arrived at Fort Benton. They arrived there July 4, and worked down the river, 240 miles, to Trover's Point, Montana, where field work for the season ended October 1. Since that time the adjustment and computation of the triangulation have been under way and were completed with the close of the fiscal year.

Tabulation of final results and plot of the triangulation are appended. (Appendix A 2.)

For full details as to the field work, base measurements, levelings, &c., reference is respectfully made to my report to you dated March 1, 1886 (copy herewith, marked Appendix A 3).

Attention is called to the remarkably good results obtained in the measurement of secondary bases with our steel tape. Comparisons were made during the year of our standard tape with others belonging to Prof. J. B. Johnson, of Washington University, and Prof. D. C. Humphreys, of Washington and Lee University. In March, 1886, Professor Johnson, who is publishing a text-book on "Surveying," was, at his request, furnished with an abstract of the results obtained under the Commission in measuring secondary bases with a steel-tape. This was done in view of the fact that otherwise it would probably be a year or more before these interesting results were published.

Before computation the triangulation was adjusted by the method of least squares. The adjustment has been rigid, with one or two exceptions, where the highest refinement would not have materially altered the result and would have entailed an expense not admissible at present. The number of combined angles entering the adjustments was 388, with corrections as follows:

Between 0" and 1"	270
Between 1" and 2"	102
Between 2" and 3".08	16

The computation was through 90 triangles, from the following data:

Base.	Length.	Observed azimuth.	Elevation.
	<i>Meter.</i>	° ' "	'
Benton	3008.06	E. base to W. 73 01 05.73	2900
Trover's Point.....	2959.84	W. base to E. 251 29 12.23	2244

Bases were reduced to sea level. Latitude and longitude of E. base at Benton, as transferred from flag-staff (determined during Northern Boundary Survey) were: Latitude, 47° 50' 26" north, longitude 110° 40' 03" west from Greenwich.

Clarke's values were adopted in computing. The general method followed in the computation was that given in Merriman's Method of Least Squares, the solution being made by the use of correlates. This does not differ materially from the method given in Clarke's Geodesy for a simple quadrilateral, or from the method used under General Comstock on the Mississippi River. The final discrepancies are:

	Log. meters.	Azimuth.
		° ' "
Trover's Point base, measured.....	3.4712689	251 29 10.18
Computed from Benton	3.4713670	12.23
Difference	.0000981	2.05

The difference in azimuth is less than the range ($4''.5$) of three nights' observations on Polaris at Benton. The difference in length of base is 1 in 4,400, or $1'.2$ in one mile. The following is of interest in this connection:

MEMORANDA OF DISCREPANCIES.

Secondary triangulation, Mississippi River Commission.

Report for—	From—	To—	Dis- tance.	No. of Δ	Discrepancies.		
					Ratio.	Per mile.	Azimuth.
			<i>Miles.</i>			<i>Feet.</i>	<i>"</i>
1881, p. 29.....	Cairo	Cottonwood	120	122	1 in 2,650	2.0	8.00
	Cottonwood	Memphis	120	103	1,830	2.8	0.59
1882, p. 63.....	Chester	Cairo		39	6,000	0.88	21.80
	Adams	Helena		4	5,700	0.92	17.00
	Helena	Greenville		219	1,000	5.28	26.6
	do	Concordia		87	1,100	4.8	.....

Cottonwood base (see Mss. Rept. 15—A. b., p. 9). Computed from Cairo and Memphis, $1^m.48 = 4'.75$ per mile = 1 in 1,111. Distance Cairo to Memphis, 230 miles, 225 triangles.

Common line (Mss. Rept. 441—B. C., p. b. and 161—B. K., p. 17). Computed from Helena and Memphis, $0^m.58 = 2'$ per mile = 1 in 2,640. Distance 75 miles by river.

Common line (Mss. Rept. 1,009—B. K., p. 8). Computed from Cairo and Chester, $1^m.39 = 0'.92$ per mile = 1 in 5,740, 39 triangles.

So that the discrepancy in computed length of base is within range, though unexpectedly large. It was equivalent to determining the length of a line 175 miles distant from the measured base through 90 triangles.

The discrepancy was distributed through the 39 parts of which the system is made up by assigning $\frac{1}{39}$ to the first part, $\frac{2}{39}$ to the second part, and so on.

Angles as adjusted were not changed, so that the lower line of any quadrilateral as tabulated will be found to be less by 25 in the seventh place of logarithms than as computed from the upper line, giving a local discrepancy of about $\frac{1}{125000}$. It was thought best not to incur the expense of greater accuracy for the present.

The observed and computed values for latitude of west base, Trover's Point, differ by $23''.7$. But the latter ($47^\circ 37' 34''.1$) is adopted until future accurate determinations of both latitude and longitude can be made.

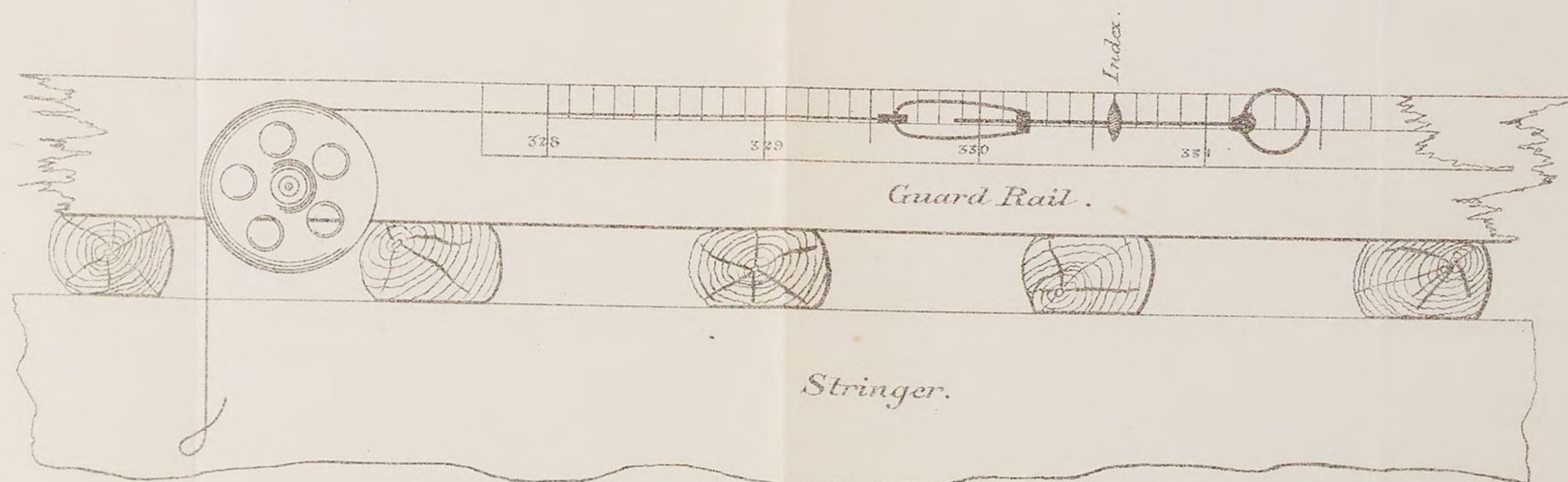
Mr. O. B. Wheeler, who has been in immediate charge of the triangulation, commends his assistants and is himself worthy of appreciation by the Commission for faithful and able work. His report is appended (Appendix A 2), which, with this, is intended as a final report on the Benton-Trover's Point division of the triangulation.

The allotment for the survey of the Missouri River is almost exhausted, there being on hand June 30, 1886, an available balance of only \$2,506.63. Although full value has been received for money already spent yet this important work, from its great extent, is still far from complete. About 1,711 miles have still to be covered by the triangulation (Glasgow, Mo., to Trover's Point, Montana), and about 1,100 miles have still to be surveyed for topography and hydrography. Fifty thousand dollars can be profitably expended in a season, one half by each of the two parties; and it is not economical to put either party in the field with an allotment of less than \$25,000.

There are several reasons why the survey should be immediately and continuously pushed to completion. It is the necessary preliminary to the adoption of a plan for the improvement of the upper river, and can be done for at least 25 per cent. less money if continuously and energetically pushed, because large expenditures in repairs and training of party will thus be saved. But the most important reason is that the Commission have now available a corps of skillful assistants, already familiar with this particular work and river, whose services will not be available unless secured immediately. Others, perhaps not as capable and certainly having no familiarity with the work, will have to be depended on if the survey is dropped now and resumed at a later date.

The cost of the field work in Montana, as previously reported, was \$110 per mile of river covered. Although this amount is not excessive, considering the remoteness of the work done, involving large bills for transportation and the purchase of supplies at the proverbially high prices of that section, still it is believed that it can be much reduced in future, owing to two considerations:

First. The entire party were engaged from their departure from Bismarck, and the



SKETCH

of

STANDARD WIRE CABLE BRIDGE GAUGE.

Scale: 1" = 1 Ft.

St. Louis, Mo. June 30. 1886.

Forwarded with annual report of this date

Wm. A. Singmaster
1st Lieut. of Engineers

Secretary Missouri River Commission.

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THE AMERICAN GRAPHIC CO., N. Y.

survey steamer on which they went up was heavily loaded with supplies. Her power being very insufficient for work in the upper river, the trip to Benton was a prolonged one, during which the party were drawing pay and no work was being done. It was necessary to pay the party from their arrival at Bismarck, but it is believed that in future better arrangements can be made to get them to their work.

Second. It has been found not to be advisable to have the pioneering party dependent on the main party for daily accommodations. Their necessary return every night to the only steamer along (on which the main force was quartered) prevented them from keeping ahead of the others. As the pioneer party must do its work before the others can follow, much time was thus lost for lack of means to keep them in the advance. It is proposed in future to provide separate transportation for this party, so that they can keep well in the lead and only have occasionally to return to the main party for supplies or purposes of inspection by the chief of triangulation, who is the chief of the pioneers. Careful consideration and computation show that, for this purpose, in addition to the steamer carrying the main party, a small swift steam-launch is needed, and that the additional expense thereby incurred will be more than compensated by the increased distance covered during the working season and reduced cost per mile of work done.

The cost of the computation on the Benton-Trover's Point triangulation was \$2,321.66, or \$9.673 per mile, making the total cost from beginning of field work to completion of computation \$120.00 per mile.

It is believed that in future this can be reduced more than 25 per cent.

PRESERVATION AND OBSERVATION OF GAUGES AND COLLECTION AND COMPILATION OF PHYSICAL DATA.

The compilation described in detail in last Annual Report has been brought very near completion, as will be seen by reference to table in Appendix A 4.

The study of the data has been begun, and has mainly, so far, been confined to gauge relations and discharge-gauge relations. Good progress has been made. For details as to work done and an outline of methods and work proposed reference is respectfully made to Appendix A 4. Mr. J. A. Seddon, who has been in charge during the year, is entitled to credit for faithfulness and ability.

Seven thousand five hundred dollars can be profitably expended in this department during the current fiscal year.

GAUGES.

The seventeen regular gauges reported last year have been kept up and read twice daily during the year.

The records have been carefully watched by plotting and other means, and are complete and reliable. All seventeen have been twice inspected (reset and repaired when necessary) during the year, at a total cost of \$725.

There is great difficulty in establishing permanent and satisfactory gauges at reasonable cost on the Missouri River. Even those on bridge piers have not been altogether satisfactory. But a pattern of bridge gauge has been found which works well and which has been placed on all the bridges crossing the river. The number of gauge observers is thereby increased by two, but as soon as sufficient comparisons of gauge readings (which should extend through at least one high-water season) have been made it is the intention to discontinue several of the present unsatisfactory gauges.

The pattern of bridge gauge adopted is a 16 to 20 pound sash weight at the end of a $\frac{1}{8}$ -inch best Swedish iron wire cord running over a 12-inch sheave and having a turn-buckle adjuster for changes in length. Drawing herewith (sketch) shows details and method of use. Full details are given in Mr. Blaisdell's report.

Mr. A. H. Blaisdell's report on last gauge inspection (hereto appended as Appendix A 5) sets forth clearly the present state and future requirements of this indispensable branch of physical data work. Parsimony in this kind of work is more unwise even than extravagance, because records to be worth anything must be accurate, and gauge readings cannot be accurate without, first, good gauges, and, second, intelligent and reliable observers, and both cost money. I therefore urge the allotment of \$1,500 for construction and repair of gauges this fall, and of \$3,500 for their care and maintenance during the coming fiscal year.

The complete records of all United States Engineer gauges observed on the Missouri River to January 1, 1886, have been arranged, stereotyped, and an edition of 300 is being printed (Appendix A 6.)

Arrangements have been made for obtaining the railroad gauge record at Bismarck, Dak., and also a monthly cross-section of the river there.

LEVELS.

In connection with the survey of the Missouri River, question arose as to the reliability of the elevations determined in past years; because the instruments used had been wye levels with New York rods, whereas the so-called precise leveling of the Mississippi River Commission had been done with Kern instruments and self-reading rods. The Coast and Geodetic Survey people, who are engaged upon a transcontinental line of levels, have advanced as far west of Saint Louis as Etlah, Mo., a station on the Missouri Pacific Railroad.

For nearly 20 miles (from South Point to Etlah) their line lies along the right bank of the Missouri River, where there are many United States Engineer bench-marks. The instruments used by them do not differ materially from those used by the Mississippi River Commission, so a party was sent into the field during February for two objects:

(1) By connecting the United States Engineer and Coast Survey bench-marks to get a check on our own elevations.

(2) To determine how closely to a line of "precise" levels a line can be run with a wye level.

A report of the information obtained was submitted to you under date of April 1. The conclusion therein reached was that there is every reason to abide by the elevations along the Missouri as at present determined. For details reference is respectfully made to said report (hereto appended as Appendix A 7).

This discussion is not yet fully complete, owing to lack of funds for farther field investigation, which it is estimated will cost \$800.

TOW-BOAT.

The drawings have all been completed and blue printed. The specifications are drawn up and ready for the printer.

A model of the hull has been made. Nothing further has been done since May, 1885.

COMMERCE.

By resolution of the Commission of December 11, 1885, the Secretary was directed to "procure statistics as complete as possible of the commerce of the Missouri River." This report was submitted to the President of the Commission June 30, 1886, and is herewith as Appendix A 8.

EXPENDITURES.

SURVEY OF MISSOURI RIVER FROM ITS MOUTH TO FORT BENTON, MONTANA.

[Act passed August 2, 1882.]

Amount available of above appropriation July 1, 1885.....	\$8,500 00
Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:	
Wages.....	\$5,297 67
Traveling expenses	113 45
Subsistence stores.....	66 34
Transportation of employés.....	55 16
Paper	20 75
Hauling out steamer Missouri	350 00
Repairing instrument	10 00
	\$5,913 37
Unpaid liabilities June 30, 1886.....	80 00
Amount expended during fiscal year	5,993 37
Amount available July 1, 1886.....	2,506 63

OFFICE EXPENSES, TRAVELING EXPENSES, AND SALARIES OF COMMISSION.

Amount available of above allotment July 1, 1885.....	\$9,404 19	
Received from sales of fuel to officers	131 22	
Unpaid liabilities June 30, 1885.....	197 85	
		<u>\$9,733 26</u>

Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:

Wages.....	\$6,275 05	
Mileage.....	357 68	
Fuel.....	373 08	
Transportation of employés.....	25 00	
Traveling expenses	219 35	
Stationery	244 10	
Sundries.....	83 61	
Ice	24 72	
Office rent	600 00	
Office furniture	84 00	
Water tax	10 00	
Telephone	50 00	
Gas.....	15 30	
Awnings.....	16 75	
Typewriter	85 00	
Lumber	69 12	
		<u>8,532 76</u>

Unpaid liabilities June 30, 1886.....	438 82	
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Amount expended during fiscal year..... 8,971 58

Amount available July 1, 1886..... 761 68

ADDITIONAL SURVEYS AND ESTABLISHMENT OF PERMANENT BENCH-MARKS BELOW SIOUX CITY.

Amount available of above allotment July 1, 1885.....	\$1,326 00	
Unpaid liabilities June 30, 1885.....	323 07	
		<u>\$1,649 07</u>

Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:

Wages.....	791 58	
Pipe.....	291 25	
Iron rings and wire	7 77	
Transportation of instruments.....	3 75	
Privilege of felling trees	52 00	
		<u></u>

Amount expended during fiscal year..... 1,146 35

Amount available July 1, 1886..... 502 72

PRESERVATION AND OBSERVATION OF GAUGES, AND COLLECTION AND COMPILATION OF PHYSICAL DATA.

Amount available of above allotment July 1, 1885.....	\$10,436 58	
Unpaid liabilities June 30, 1885	60 00	
		<u>\$10,496 58</u>

Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:

Wages.....	\$7,317 50	
Traveling expenses	445 24	
Rock	35 00	
Rods	51 10	
Stationery	24 95	
Sundries.....	16 01	
Transportation of employés	10 00	
Wire	3 25	
Paper	37 50	
Repairing instruments	10 00	
Material and labor	15 30	
		<u>7,965 85</u>

Unpaid liabilities June 30, 1886	1,090 40	
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Amount expended during fiscal year..... 9,056 25

Amount available July 1, 1886..... 1,440 33

PURCHASE OF TOW-BOAT.

Amount available of above allotment July 1, 1885.....	\$24,150 00
Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:	
Wages.....	\$250 00
Amount expended during fiscal year.....	250 00
Amount available July 1, 1886.....	23,900 00

OFFICE EXPENSES AND EXPENSES OF COMMISSION.

[Sioux City, Iowa, to Fort Benton, Montana.]

Amount available of above allotment July 1, 1885.....	\$5,000 00
Received from sales of fuel to officers	50 24
	<u>\$5,050 24</u>
Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:	
Wages.....	\$2,110 81
Mileage	876 16
Transportation of employés	193 55
Traveling expenses.....	327 00
Rent of rooms.....	5 00
Telegrams	9 43
Fuel.....	1,049 34
Stationery.....	33 64
Sundries.....	57 04
Gas	5 60
Office rent	300 00
Telephone	25 00
Water tax	10 00
	<u>5,002 57</u>
Unpaid liabilities June 30, 1886.....	46 10
Amount expended during fiscal year	<u>5,048 67</u>
Amount available July 1, 1886.....	1 57

SURVEYS BETWEEN FORT BENTON, MONTANA, AND SIOUX CITY, IOWA.

Amount available of above allotment July 1, 1885.....	\$11,733 90
Unpaid liabilities June 30, 1885.....	3,584 96
	<u>\$15,318 86</u>
Itemized expenditures from July 1, 1885, to June 30, 1886, both dates inclusive:	
Wages.....	\$12,174 34
Traveling expenses.....	200 90
Subsistence stores	1,157 00
Paper	1 70
Fuel.....	1,247 25
Stationery	23 65
Transportation of instruments.....	359 90
Lumber	15 25
Sundries.....	138 87
Amount expended during fiscal year.....	<u>15,318 86</u>

APPENDIX A 1.

REPORT OF LIEUTENANT THEODORE A. BINGHAM, CORPS OF ENGINEERS, SECRETARY
OF COMMISSION.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., March 6, 1886.

SIR: I have the honor to submit herewith extracts from the records of this office relative to secondary triangulation along the Missouri River during the winter of 1884-'85.

Work began November 12, 1884, at Glasgow, Mo., and ended at Tavern Rock, Mo., March 30, 1885, a distance of 176 miles.

Sixty-nine triangulation stations were occupied determining 129 triangles and 35 quadrilaterals.

The system depends on a base line determined at Glasgow, in November, 1885, and on the Coast Survey station at Tavern Rock, with which connection was made.

Instruments used and methods of work and reduction were the same as described in detail in my report of work in Montana, dated March 1, 1885.

The Glasgow base was measured twice. The difference between the two measurements was 0'.166 giving a mean length of 7923'.32. The probable error of this mean is $\pm 0'.056$, or one in 140,000. But because the conditions of light and temperature were more nearly constant and alike during the first part of the first measurement and the second part of the second these two parts have been combined for the final result.

The result thus obtained is 7923'.344. A complete record of the measurement is given in Appendix A 1b.

One photograph is appended showing the arrangement of a triangulation station.

In Appendix A of the annual report of the Missouri River Commission for 1885 is reported the work of establishing permanent level bench-marks done during the same winter of 1884.

Table of itemized expenditures during the working season is appended.

Very respectfully, your obedient servant,

THEO. A. BINGHAM,

First Lieutenant Engineers, Secretary Missouri River Commission.

Maj. C. R. SUTER,

Corps of Engineers, U. S. A., President Missouri River Commission.

Allotment: additional surveys and establishment of permanent bench-marks below Sioux City, Iowa.

[Itemized expenditures for working season—November 12, 1884, to May 13, 1885.]

On what account.	1884.		1885.					Paid since to March 1, 1886.	Total.
	Novem-ber.	Decem-ber.	January.	Febru-ary.	March.	April.	May.		
Pay-rolls	\$1, 861 23	\$3, 811 24	\$1, 359 92	\$1, 664 50	\$3, 199 93	\$1, 047 40	\$929 95	\$598 75	\$14, 472 92
Subsistence stores..	467 21	755 60	1 05	.....	.....	19 45	.....	.....	1, 243 31
Bench-marks	57 90	48 25	700 35	.....	2, 657 16	1, 572 50	.....	.....	5, 036 16
Station-markers .....	.....	.....	3 80	.....	.....	3 25	.....	.....	7 05
Traveling expenses	162 75	30 30	56 60	28 50	40 35	36 80	19 60	.....	374 90
Transportation of instruments .....	.....	23 55	.....	.....	.....	5 50	2 50	3 75	35 30
Wagons, and repairs of same	181 00	13 20	25 85	.....	.....	.....	6 25	.....	226 30
Note-books	26 00	.....	.....	.....	.....	.....	.....	.....	26 00
Lumber	241 28	34 13	.....	84 40	.....	.....	.....	.....	359 81
Oakum	55 50	.....	.....	.....	.....	.....	.....	.....	55 50
Cloth	33 59	.....	35	.....	.....	8 20	.....	2 17	44 31
Targets and spoons .....	.....	.....	7 25	.....	.....	39 19	.....	.....	46 44
Wire and rings .....	.....	2 80	9 65	.....	25	.....	.....	4 69	17 39
Paints, oils, &c.	65 06	.....	.....	.....	.....	.....	.....	.....	65 06
Medicines	12 15	.....	.....	.....	.....	.....	.....	.....	12 15
Sundries	44 41	2 98	10	4 60	1 10	.....	.....	3 48	56 67
Tools .....	.....	.....	18 35	25 75	.....	6 00	.....	.....	50 10
Spokes, hinges, bolts and hasps	10 50	1 00	.....	.....	.....	.....	.....	.....	11 50
Nails and spikes	40 23	9 82	.....	.....	4 30	5 25	.....	.....	59 60
Lanterns and oil	4 90	10 92	.....	2 75	.....	.....	.....	.....	18 57
Stoves and shovels	40 50	21 05	.....	.....	.....	.....	.....	.....	61 55
Jack screws .....	.....	.....	.....	.....	1 00	.....	.....	.....	1 00
Rope	1 28	4 20	.....	.....	.....	.....	.....	.....	5 48
Mates' and steward's supplies	26 48	6 00	.....	.....	.....	25	.....	.....	32 73
Pipe, bolts, cutting and drilling .....	.....	.....	.....	.....	.....	928 90	.....	291 25	1, 220 15
Fuel .....	.....	.....	.....	.....	.....	21 00	.....	.....	21 00
Repairs of instruments	6 25	.....	.....	.....	.....	.....	.....	.....	6 25
Privilege of felling trees .....	.....	.....	.....	.....	.....	20 80	.....	96 40	117 20
Total	3, 338 22	4, 775 04	2, 183 27	1, 810 50	5, 904 09	3, 714 49	958 30	1, 000 49	23, 684 40

APPENDIX A 1a.

REPORT OF MR. O. B. WHEELER, ASSISTANT ENGINEER.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., November 12, 1885.

SIR: In accordance with your instructions, I have the honor to make the following report on the year's field work on the triangulation of the Missouri River.

A year ago to-day I reported at this office to receive instructions in regard to organizing parties for carrying on a secondary triangulation of the river.

Tertiary triangulation had previously been carried from Pierre, Dak., to the mouth of the river, in years 1878 to 1882, and a photolithographic topographical map published. Also the construction parties had from time to time made tertiary triangulation surveys of a portion of the same river, the principal one being the "low-water survey of 1882," extending from the vicinity of Saint Joseph to Boonville.

Maps of the upper river depend on meanders, with estimated distances, corrected at points by astronomical observations.

In the tertiary triangulation surveys the station markings were of necessity on the bottom lands, and not of a permanent character, and it was desirable that a more permanently marked and more accurate triangulation should be made, where the bases should be measured with greater refinement and the angles measured with a better class of instruments.

It was decided that the triangulation should be carried on the bluffs and above the trees of the bottom lands; that a quadrilateral system should in general be obtained and adjusted as such; that the angles should be measured with 10-inch limb theodolites graduated to five minutes and read by two micrometers to single seconds, and that the base lines should approximate two miles in length and be measured with a standard 300-foot steel tape, using standard thermometers to reduce for temperature to 62° Fahr. The required instruments for this were furnished from the office of the Mississippi River Commission; other instruments, such as field theodolites, prismatic compasses, reconnoitering telescopes, &c., were furnished from this office.

FIELD-WORK IN MISSOURI.

The proposed winter's work was to carry the triangulation from the vicinity of Glasgow to the mouth of the river.

On November 15, at Glasgow, three small parties were organized, namely, an observing party on the left bank, consisting of Assistant Engineer D. C. Humphreys, a rodman, and a teamster; an observing party on the right bank, consisting of Assistant Engineer J. C. Quintus, a rodman, a teamster, and a reconnoitering party consisting of myself, a rodman, and boatman. A skiff was furnished the reconnoitering party, and a spring wagon furnished each observing party. A per diem allowance for subsistence had been arranged, and the teamster furnished his own team and its subsistence. The station building and marking and the clearing of lines were in charge of Capt. D. W. Wellman, of the steamer Missouri, who also made the connections of stations with points of tertiary triangulation until the close of river navigation, when the latter duty devolved on the observers. The observers also connected the stations with points of land surveys, and located public buildings in many towns.

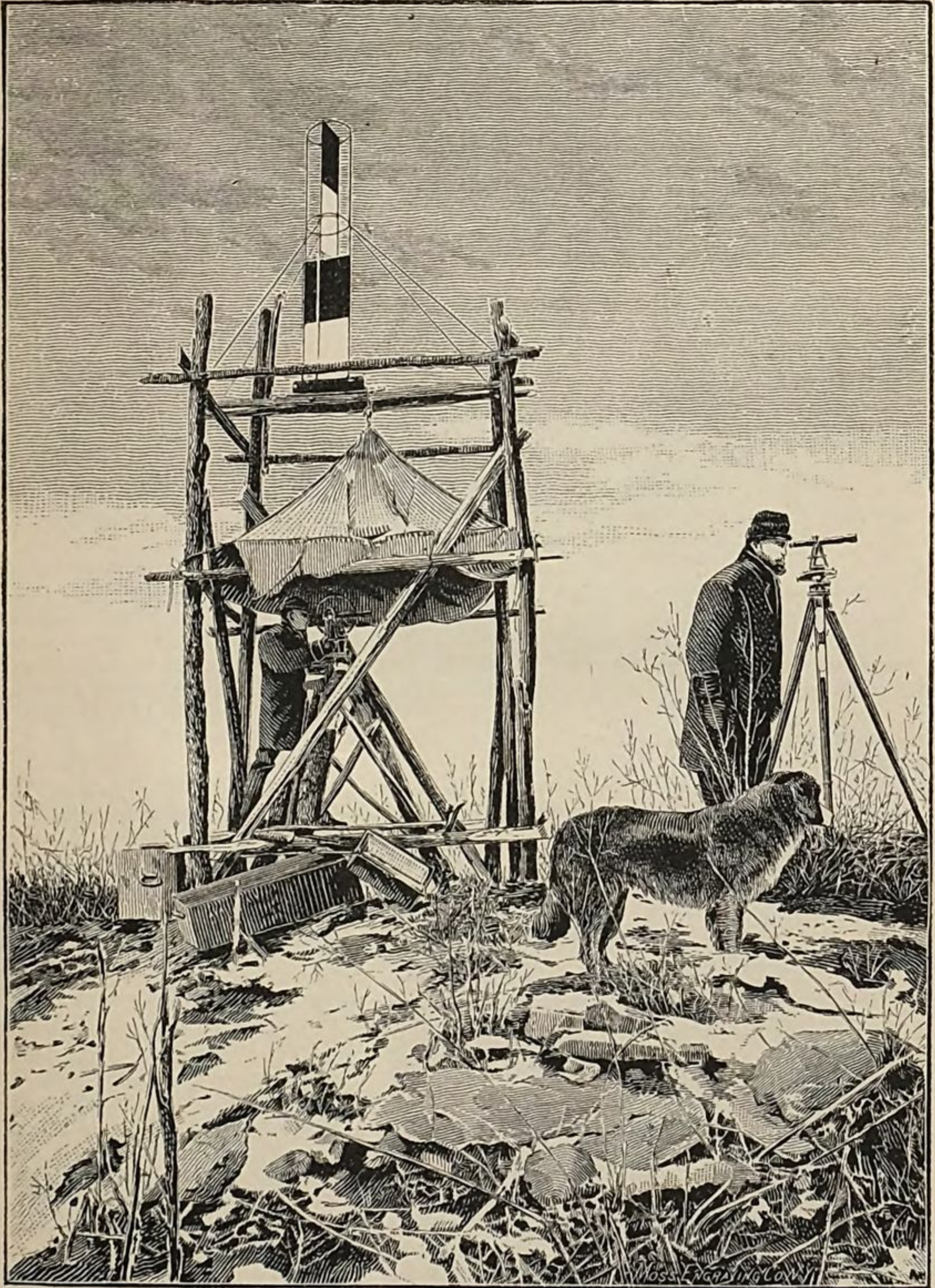
The marking stone and pipe were of the same design and dimensions as used by the Mississippi River Commission. The stations were generally of low (5 to 8 feet) tripods, with a target frame outside, built from timber at hand, and when being occupied an observing tent, or a tent fly, was supported by the target frame to screen the instrument from the sun, or strong winds.* The target was always placed vertically above the center of the station, and was the wire target of the Mississippi River Commission. The best target yet devised for the purpose.

In the vicinity of Glasgow ten stations had previously been located and built, but the lines were not all cleared. It was found that three of the lines were impossible on account of intervening ridges between stations, and it was necessary to locate two new stations to help the matter out. Two stations were also located as limits to a base line on the bottom land opposite Glasgow. After the close of river navigation Captain Wellman, at Boonville, placed the station building in charge of an assistant engineer, who had a small party on each bank, each party having a team.

Official word came that "the station building should be pushed as fast as possible"; accordingly I was required to reconnoiter ahead, and was with the observing parties but little during the winter. The reconnoitering to close the work on stations of the Mississippi River Commission was finished on March 24. The map above-

* See photograph No. 1.

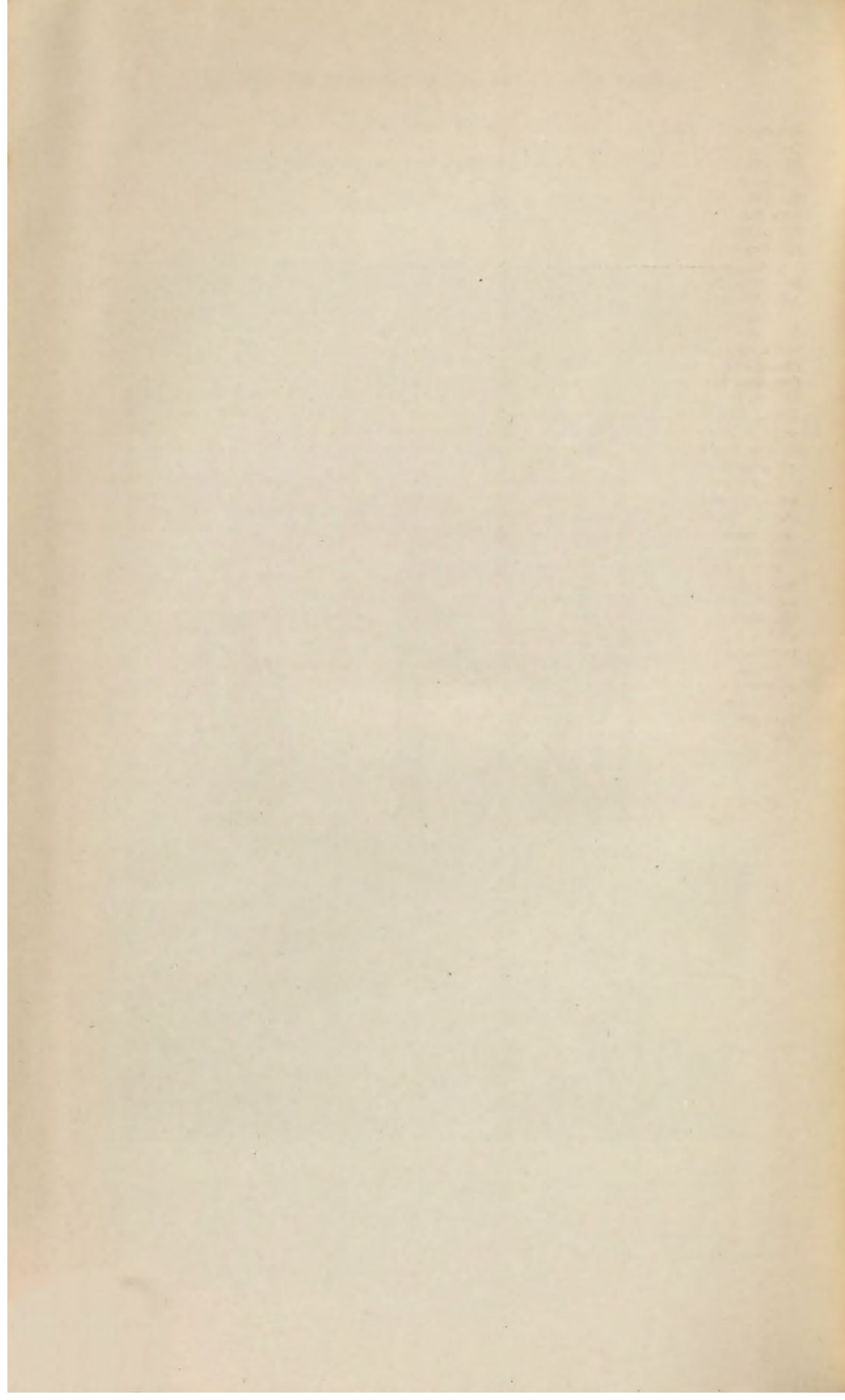
No. 1.



△ SEARCEY,

Four miles below Rocheport, Mo.

H. Ex. 28—2-49



mentioned was of great service in reconnoitering, and in finding the location of tertiary triangulation points. County atlases, tax receipts, and deeds were referred to in getting the description of the land upon which stations were located.

The consent of parties owning the land was generally obtained, but the cutting of timber, or the obstruction of a station to cultivation, generally gave dissatisfaction, and many claims for damages were presented. It would be well if the assistant were furnished with a contract form, with instructions to guide in making a contract at the beginning, before the owner's estimate for damages becomes excessive.

I would here state that in a wooded country the winter season is the proper time to reconnoiter, when the twigs are clear of leaves and the snow on the ground is an advantage in showing the outlines of the hills.

During the winter the observing parties had worked under great discouragement on account of the imperfectly cleared lines, having to give much time and labor to work that should have been done by the station-building parties. The assistant in charge of station-building parties had been very dissipated, and was discharged by Captain Wellman, at Hermann, being replaced by Assistant Engineer Mersereau on March 7. The work was carried on energetically to the Coast Survey station, Tavern Rock, about 38 miles west from Saint Louis, where a good connection being made with a Coast Survey line, and through this with the Mississippi River triangulation, it was decided to close the winter's work. A Coast Survey line was also connected with at Jefferson City.

During the latter six weeks I was with or near the observing parties, and assisted with my small party in the setting of targets, and in seeing that the lines were made clear. There was yet much to be done in the clearing of lines between Jefferson City and Hermann, and the observing parties were hindered somewhat, yet the number of stations occupied in the last six weeks was 35 against 34 previously occupied.

It is proper here to state that the winter being severe, with much snow, at times it was difficult to make out the black and white target as projected against trees and snow-covered hills; that the targets were sometimes disturbed by sleet storms; that the instruments worked hard when extremely cold, and that for such reasons the triangles did not always close within the 6'' limit, and it was frequently necessary to reoccupy stations.

On the resignation of Mr. Quintus, on May 8, Mr. Bathurst Smith, rodman, was promoted to assistant engineer and observer.

The field was completed on May 13, and the observing parties came to Saint Louis preparatory to leaving for field duty in Montana. There had been 69 stations occupied, giving 129 triangles and 35 quadrilaterals over an axillary distance of 155 miles.

Respectfully submitted.

O. B. WHEELER,
Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers U. S. A., Secretary Missouri River Commission.

APPENDIX A 1b.

MEASUREMENTS OF THE GLASGOW BASE.

The two measurements of the Glasgow Base are expressed by the following equations:

$$(1) 26 \times 299'.079 + \frac{1 \text{ tape} + \text{foot}}{2} - 1'.475 \pm 0'.000 - 0'.453 - 0'.920 = 7923'.237.$$

$$(2) 26 \times 299'.079 + \frac{1 \text{ tape} + \text{foot}}{2} - 1'.033 - 0'.667 - 0'.453 - 0'.523 = 7923'.403.$$

where:

First term is number of entire tapes multiplied by length of tape at 62° Fahr.

Second term is distance between the respective measurement marks on zinc 26 and, for each measurement, the mean of the two successive marks on zinc 26½, as measured by applying 150 feet of tape successively under a strain of 16 pounds, and for the last 150 feet applying one foot of a box-wood scale to the 299-foot graduation to make out the 150 feet. This distance is, for each measurement when reduced to 62° Fahr., = 150'.031 and 150'.025 respectively.

Third term is distance, for each measurement, between the mean of two successive marks on zinc 26½, as above, and Δ West Base as measured with a box-wood scale.

Fourth term is distance set back on zinc 23 on second measurement.

Fifth term is total inclination-of-tape correction.

Sixth term is temperature correction to reduce 26 tapes at tape temperature to 62° Fahr., and the second member is the corrected independent result for each measurement.

The mean of the two results is 7,923'.320. The probable error, from the results themselves, is $\pm 0'.056$, or one in 140,000.

A truer result can be obtained, it is believed, by combining, as stated in the field-notes at the time of measurement, the first fifteen tapes of the first measurement with the eleven and a half of the second. (See note under table of temperature.)

We then have the following four equations for parts of the base with terms as above described, except that the sixth term is temperature correction for 15 tapes and 11 tapes respectively, and a seventh term is added to reduce the first measurement to the second on zinc 15.

First part of (1):

$$15 \times 299'.079 \pm 000'.000 \pm 0'.000 \pm 0'.000 - 0'.260 - 0'.625 + 0'.335 = 4485'.635.$$

First part of (2):

$$15 \times 299'.079 \pm 0'.000 \pm 0'.000 \pm 0'.000 - 0'.260 - 0'.230 \pm 0'.000 = 4485'.695.$$

Second part of (1):

$$11 \times 299'.079 + 150'.031 - 1'.475 \pm 0'.000 - 0'.193 - 0'.294 - 0'.335 = 3437'.603.$$

Second part of (2):

$$11 \times 299'.079 + 150'.025 - 1'.033 - 0'.667 - 0'.193 - 0'.292 \pm 0'.000 = 3437'.709.$$

The result thus obtained is the sum of 4485'.635 and 3437'.709, or 7923'.344.

Glasgow Base (at its own elevation above sea-level) = 7923'.344.

Respectfully submitted.

O. B. WHEELER,
Assistant Engineer.

First Lieut. THEO. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission.

Temperatures of Glasgow Base.

Number of tape.	First measurement.			Second measurement.		
	November 4, 1885— time.	Thermometers.		November 4, 1885— time.	Thermometers.	
		G.	H.		G.	H.
	A. M.			P. M.		
1.....	8 24	42.0	42.0	2 22½	56.0	56.0
2.....	30	42.0	42.0	26	57.5	58.0
3.....	34	41.5	42.0	29	57.5	56.0
4.....	39	41.5	42.5	33	57.0	56.0
5.....	45	44.0	44.0	40	57.0	60.0
6.....	9 00	43.8	43.5	45	56.0	56.0
7.....	04	42.8	43.0	49	55.5	55.5
8.....	08	42.9	43.5	55	57.5	56.25
9.....	12	43.0	43.5	3 00	57.5	55.0
10.....	18	43.3	43.0	05	55.5	55.5
11.....	23	43.0	44.0	08	56.5	55.5
12.....	26	43.7	44.0	12	56.0	56.5
13.....	33	43.1	43.0	16	54.0	54.0
14.....	40	43.4	43.0	20	52.5	52.5
15.....	45	43.0	43.5	24	51.1	51.5
Sum		643.0	646.5		837.1	834.25
Mean of 15.....		42.87	43.10		55.81	55.62
Correction.....		—0.78			—0.93	
Corrected mean...		42.09			54.88	
16.....	11 55	49.7	50.0	3 27	50.8	51.6
17.....	58	50.4	50.25	31	50.2	51.0
18.....	12 03	50.3	51.0	35	50.2	51.5
19.....	07	49.8	50.0	39	50.2	51.0
20.....	10	51.0	50.25	43	50.1	51.0
21.....	14	51.2	52.0	47	50.0	51.0
22.....	18	51.1	51.0	51	50.0	50.5
23.....	22	50.0	49.5	56	50.3	51.0
24.....	28	49.0	49.0	4 10	50.9	52.5
25.....	31	49.3	49.5	13	50.9	52.0
26.....	38	50.9	57.0	20	50.5	52.0
Sum		552.7	559.5		554.1	565.1
Mean of 11.....		50.25	50.86		50.37	51.37
Correction.....		—1.02			—1.02	
Corrected mean ..		49.23			49.25	
Mean of 26.....		45.99	46.38		53.51	53.82
Correction.....		—0.89			—1.11	
Corrected mean ..		45.10			52.40	
26½.....	12 51	54.6	54.9	4 30	48.9	50.25
Correction.....		—1.13			—0.99	
Corrected 26½.....		53.47			47.91	

NOTE.—“G” is a compared thermometer belonging to the Mississippi River Commission, and “H” is an uncomparing one (graduated to 2° intervals) belonging to Mr. D. C. Humphreys.

The first part of the first measurement was made during a cool, cloudy morning, but the second part was made when the sun, at times, had direct effect on the thermometer. The first part of the second measurement was made when the sun had direct effect, but the thermometer bulb was within a loose coil of wire to shade it from the direct rays of the sun. The wire was of about the same shade of color as the tape. The second part of the second measurement was made when the sun had no direct effect on the thermometer, being completely overcast.

Correction for inclination of tape on Glasgow Base.

[$\sin i = \frac{h}{l}$; correction = $\text{ver sin } i \times l$; i = angle of inclination; h = difference of elevation; l = length of tape.]

Number of stake.	Elevation.	Difference of elevation.	Log h .	Log $\sin i$.	i .	Log $\text{ver sin } i$.	Log correction.	Correction.
Δ East Base.....	100.0				0			
Zinc 0	101.1	1.1						
1	97.9	3.2	0.50515	8.02936	37	5.76282	8.23861	0.0173
2	102.1	4.2	0.62325	8.14746	48	5.98890	8.46469	0.0292
3	99.8	2.3	0.36173	7.88594	26	5.45637	7.93216	0.0086
4	98.3	1.5	0.17609	7.70030	17	5.08732	7.56311	0.0037
5	107.0	8.7	0.93952	8.46373	1 40	6.62639	9.10218	0.1261
6	104.9	2.1	0.32222	7.84643	24	5.38684	7.86263	0.0073
7	99.8	5.1	0.70757	8.23178	59	6.16812	8.64391	0.0441
8	101.1	1.3	0.11394	7.63815	15	4.97860	7.45439	0.0028
9	104.5	3.4	0.53148	8.05569	39	5.80855	8.28434	0.0192
10	104.4	0.1	9.00000	6.52421	01	2.62642	5.10221	0.0000
11	104.1	0.3	9.47712	7.00133	03	3.58067	6.05646	0.0001
12	104.6	0.5	9.69897	7.22318	06	4.18273	6.65852	0.0005
13	104.2	0.4	9.60206	7.12627	05	4.02436	6.50015	0.0003
14	104.1	0.1	9.00000	6.52421	01	2.62642	5.10221	0.0000
15	104.8	0.7	9.84510	7.36931	08	4.43260	6.90839	0.0008
Correction for 15 tapes.....								0.2600
16	102.0	2.8	0.44716	7.97137	32	5.63672	8.11251	0.0130
17	108.6	6.6	0.81954	8.34375	1 16	6.38803	8.86382	0.0730
18	102.6	6.0	0.77815	8.30236	1 09	6.30411	8.77990	0.0602
19	103.9	1.3	0.11394	7.63815	15	4.97860	7.45439	0.0028
20	102.6	1.3	0.11394	7.63815	15	4.97860	7.45439	0.0028
21	103.5	0.9	9.95424	7.47845	10	4.62642	7.10221	0.0013
22	104.6	1.1	0.04139	7.56560	13	4.85431	7.33010	0.0021
23	102.7	1.9	0.27875	7.80296	22	5.31127	7.78706	0.0061
24	101.6	1.1	0.04139	7.56560	13	4.85431	7.33010	0.0021
25	101.4	0.2	9.30103	6.82524	02	3.22848	5.70427	0.0001
26	105.5	4.1	0.61278	8.13699	47	5.97061	8.44640	0.0280
Zinc 26½ (140')	104.7	0.8	9.90309	7.72700	18	5.13697	7.31306	0.0020
Top of pipe	103.9							
Correction for 11 tapes.....								0.1935
Correction for 26½ tapes.....								0.4535

Measurement of the differences at end of each tape—Glasgow Base.

Number of stake.	Second measurement—First measurement.			Remarks.
	Readings on zincs.	Corrections.	Reduced.	
	"	"	"	
1.....	+0.30		+0.30	The second measurement is taken as a standard and the differences recorded as corrections to the first measurement.
2.....	+0.67	.....	+0.67	
3.....	+1.02	.....	+1.02	
4.....	+1.28	.....	+1.28	
5.....	+1.51	.....	+1.51	
6.....	+1.72	.....	+1.72	
7.....	+2.04	.....	+2.04	
8.....	+2.35	.....	+2.35	
9.....	+2.69	.....	+2.69	
10.....	+2.98	.....	+2.98	
11.....	+3.25	.....	+3.25	
12.....	+3.45	.....	+3.45	
13.....	+3.64	.....	+3.64	
14.....	+3.85	.....	+3.85	
15.....	+4.02	.....	+4.02	
16.....	+3.93	.....	+3.93	
17.....	+3.77	.....	+3.77	
18.....	+3.62	.....	+3.62	
19.....	+3.45	.....	+3.45	
20.....	+3.27	.....	+3.27	
21.....	+3.15	.....	+3.15	
22.....	+3.02	.....	+3.02	
23.....	+3.04	.....	+3.04	
24.....	-4.95	+8.00	+3.05	Set back 8'.00 on zinc No. 23 of the second measurement.
25.....	-4.95	.....	+3.05	
26.....	-5.17	.....	+2.83	
26½.....	-5.31	.....	+2.69	

APPENDIX A 2.

SECONDARY TRIANGULATION OF THE MISSOURI RIVER.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., July 12, 1886.

SIR: I have the honor to submit a report on the secondary triangulation of the Missouri River for the year ending June 30, 1886, and to include the results of the least square adjustment of the triangulation in Montana.

The work was begun at Benton, Mont., early in July, and completed to Trover's Point on the 30th of September, a distance, by river, of about 240 miles. There were 94 stations occupied and two base lines measured, one at either end of the work. Observations for the azimuth of the base lines were taken on five nights. Observation for the approximate latitude of one azimuth station was obtained, while that for the other was transferred by triangulation from a point the latitude and longitude of which is published. (See Appendix A 2, Table II.)

After returning from Montana, the steel tape used in base-line measurements was standardized by measuring a known distance of 2 miles on a primary base line. Also, a secondary base line was measured at Glasgow, Mo., and observations for its azimuth made. The work of reduction was then commenced by myself with one assistant. The nine individual measurements on the four base lines were reduced and reports submitted.

The field computation of the Montana triangulation was received and the angles tabulated preparatory to the least square adjustment. There was no run of micrometer applied, since the mean run for one revolution from 31 determinations on one instrument and 40 on the other was not more than one-tenth of a second of arc, and this correction is as likely to be plus as minus in each of the eight changes of the circle for each angle.

The correction for spherical excess was also insignificant, for the total area of the net—177 miles in axial length by $2\frac{1}{2}$ miles in mean width—is less than 500 square miles, or the spherical excess less than $7''$ (at $1''$ for every 75 square miles), and this is to be distributed through 90 triangles, or 270 angles. The greatest area of any one triangle is $13\frac{1}{2}$ square miles, or the greatest spherical excess for any angle of any triangle is less than one-tenth of a second. (In transferring azimuth in the geodetic computation, however, care was taken to eliminate the spherical excess by alternately adding and subtracting the plane angle.)

The system was a series of quadrilaterals. There were, however, seven figures with more than four sides and one quadrilateral in which one diagonal was not obtained. The angle adjustment has been practically rigid with one exception. The Hawley Bend net of seven stations gave eleven angle equations and six side equations. To simplify this adjustment only one side equation was introduced, and that required that the last side computed from the first should be the same by two routes only. In testing this adjustment it was found that the greatest discrepancy in the length of any line, in the figure computed by different routes, was 36 in the seventh place of logarithms, or one in 121,000 parts of the line.

The number of combined angles entering into the adjustments was 388, and the corrections to these lie as follows:

Between $0''$ and $1''$	270
Between $1''$ and $2''$	102
Between $2''$ and $3''.08$	16

The computation of the triangulation from Benton Base to Trover's Point Base was through 90 triangles, and the results in Table I depend on the following data:

Bases reduced to sea level.		Observed azimuth of bases.	
	Meters.		° ' "
Benton	3008.06	East Base to West Base.....	73 01 05.73
Trover's Point	2959.84	West Base to East Base.....	251 29 12.23
and the transferred latitude and longitude of station East Base, Benton, as $47^{\circ} 50' 26''$ and $110^{\circ} 40' 03''$, respectively.			

The bases were reduced to sea-levels, the former for an elevation of 2,900 feet, the latter for an elevation of 2,244 feet. Clarke's value of the logarithm for converting feet to meters, namely, 0.5159890, was used, and the geodetic computation conforms to Clarke's Spheroid.

The discrepancies in length of line and azimuth on the first computation with the adjusted angles were as follows:

	Log. meters.	Azimuth.		
		°	'	"
Trover's Point, base measurement.....	3.4712689	251	29	10.18
Computed, from Benton.....	3.4713670	251	29	12.23
Difference	981			2.05

This is a discrepancy of one in 4,400 in the length of line, while that in azimuth is within the range of star determination on different nights.

These discrepancies were distributed through the 39 parts of which the system is made up by allotting one thirty-ninth of the discrepancies to the first part, two thirty-ninths to the second part, &c. The angles of the adjustments have not been changed, and it will be found that the lower line of any quadrilateral, as tabulated, is less by 25 in the seventh place of logarithms than a value computed from the upper line. This is a local discrepancy of about one in 125,000 parts of the length of line, or practically of no import.

The observed value for the latitude of station West Base, Trover's Point, as given in Table III, is less than that computed in Table I by 23".7, but since the former is only approximate it is thought best to retain the latter, although the reliability of the value upon which it depends is not known, expecting that a constant correction in both latitude and longitude will be applied when accurate determinations of these have been made.

All computations are in ink, in duplicate, with explanatory notes, and, together with the note-books, put in proper form for filing.

In the accompanying sketch the river is only very approximately located, since the topography has not, as yet, been done.

I wish to commend the method used in the astronomical work of making one-half the observations on the star, or sun, upon the reflected image from an artificial horizon, and thus eliminating the level error. The plan of observation was to eliminate, as far as possible, all instrumental errors. Without the necessity for reading the level the observations can be made much more rapidly, and thus the set completed under the most favorable position of the object, and when a large error in time would have the least effect on the result.

It would seem that the bases are now measured with all desirable accuracy, but that attention must be paid to the targets and to the readings of angles, that this accuracy may not be too soon lost in the transfer by triangulation. If greater accuracy is desired than is found in the present work, the bases must be nearer together and the angles read, in general, after 3 p. m., when the atmosphere is steady. (The results at any station would be greatly bettered if the angles were read on different days.)

I have to thank the observers, Assistant Engineers D. C. Humphreys and Bathurst Smith, for the faithfulness with which the adopted plans were carried out in the field, and also Assistant Engineer C. V. Mersereau through all the office computations, and Mr. Smith, while assigned to me, for the faithful aid rendered.

Very respectfully, your obedient servant,

O. B. WHEELER,
United States Assistant Engineer.

First Lieut. THEO. A. BINGHAM,
Corps of Engineers, U. S. Army,
Secretary Missouri River Commission.

TABLE I.—*Calculated results of secondary triangulation from Benton to Trover's Point.*

[Distances and azimuths are in the order of stations, 1st to 2d, 2d to 3d, and 3d to 1st, in each triangle.]

Number.	Stations.	Observed angles.	Adjusted angles.	Distance.	Azimuth.	Latitude.	Longitude.
		° ' "	"	Meters.	° ' "	° ' "	° ' "
E	East Base	38 54 17.63	18.27	3,008.06	73 01 05.7	47 50 26	110 40 03
W	West Base	96 14 52.51	53.89	2,678.85	349 14 17.0	47 49 57.53	110 42 21.33
2	Benton	44 50 47.21	47.84	4,240.13	214 05 22.7	47 48 32.32	110 41 57.29
		57.35	0.00				
E	East Base	54 28 52.85	52.16	3,003.06	73 01 05.7	.....	.....
W	West Base	86 08 53.68	53.73	3,859.69	166 50 29.4	.....	.....
4	Teton	39 22 14.80	14.11	4,731.36	307 27 44.0	47 51 59.22	110 43 03.61
		1.33	0.00				
E	East Base	93 23 10.48	10.43	4,240.13	34 06 47.4	.....	.....
2	Benton	46 15 40.72	40.81	6,537.16	167 49 41.9	.....	.....
4	Teton	40 21 10.48	08.76	4,731.36	307 27 44.0	47 51 59.22	110 43 03.61
		1.68	0.00				
2	Benton	86 04 45.12	43.56	6,537.16	167 49 41.9	.....	.....
4	Teton	47 26 16.36	14.47	8,993.40	300 22 38.2	.....	.....
1	Shonkin	46 29 02.84	01.97	6,639.53	73 58 12.8	47 49 31.80	110 36 50.59
		4.32	0.00				
4	Teton	33 49 45.83	44.82	8,993.40	300 22 38.2	.....	.....
1	Shonkin	87 07 12.15	13.34	5,837.99	207 34 28.1	.....	.....
6	Crocon	59 03 00.26	01.84	10,473.21	86 39 06.5	47 52 19.33	110 34 40.55
		58.24	0.00				
1	Shonkin	39 31 18.86	18.00	5,837.99	207 34 28.1	.....	.....
6	Crocon	43 08 57.59	56.77	3,745.72	344 27 07.7	.....	.....
3	Harvey	97 19 47.66	45.23	4,025.48	67 07 58.2	47 50 22.49	110 33 52.26
		4.11	0.00				
6	Crocon	49 27 42.84	40.83	3,745.72	344 27 07.7	.....	.....
3	Harvey	91 07 55.61	53.59	4,484.08	255 35 37.0	.....	.....
5	Brulé	39 24 27.59	25.58	5,899.21	115 02 37.6	47 50 58.56	110 30 23.36
		6.04	0.00				
6	Crocon	71 39 52.11	50.89	5,899.21	294 59 26.9	.....	.....
5	Brulé	45 05 44.09	42.88	6,271.31	160 08 20.4	.....	.....
8	Tele	63 14 27.45	26.23	4,679.44	43 21 30.7	47 54 09.52	110 32 05.95
		3.65	0.00				
5	Brule	58 53 00.25	00.00	6,271.31	160 08 20.4	.....	.....
8	Tele	67 45 48.11	47.72	6,691.69	272 21 16.6	.....	.....
7	Black Bluff	53 21 12.19	12.28	7,235.01	39 04 03.1	47 54 00.50	110 26 44.04
		0.55	0.00				
8	Tele	47 16 08.56	67.32	6,691.69	272 21 16.6	.....	.....
7	Black Bluff	50 09 09.39	09.29	4,956.85	142 34 24.6	.....	.....
10	Marias	82 34 44.61	43.39	5,180.97	45 07 20.5	47 56 07.92	110 29 09.18
		2.56	0.00				
7	Black Bluff	86 50 28.98	28.24	4,956.85	142 34 24.6	.....	.....
10	Marias	56 18 46.99	46.86	8,253.46	266 13 50.0	.....	.....
9	Three Islands	36 50 45.48	44.90	6,877.99	49 27 59.6	47 56 25.30	110 22 32.35
		1.45	0.00				
10	Marias	51 45 51.96	53.04	8,253.46	266 13 50.0	.....	.....
9	Three Islands	53 00 33.87	34.24	6,704.54	139 19 18.8	.....	.....
12	Ridge	75 13 31.34	32.72	6,817.74	34 30 15.1	47 59 09.87	110 26 03.11
		57.17	0.00				
9	Three Islands	62 52 14.21	14.36	6,704.54	139 19 18.8	.....	.....
12	Ridge	68 34 02.52	02.28	7,959.32	250 42 40.1	.....	.....
14	Recess	48 33 44.37	43.36	8,324.82	22 13 25.9	48 00 34.84	110 20 00.64
		1.10	0.00				
9	Three Islands	33 50 25.04	23.20	8,324.82	202 11 33.2	.....	.....
14	Recess	58 08 37.13	35.71	4,638.62	324 04 50.1	.....	.....
11	Mound	88 01 03.84	01.09	7,075.09	56 05 26.6	47 58 33.19	110 17 49.43
		6.01	0.00				
14	Recess	78 17 38.38	39.41	4,638.62	324 04 50.1	.....	.....
11	Mound	57 39 41.74	42.31	6,533.47	201 46 09.9	.....	.....
16	Coal Banks	44 02 37.97	38.28	5,637.41	65 50 15.1	48 01 49.63	110 15 52.47
		58.09	0.00				
11	Mound	38 00 47.37	46.32	6,533.47	201 46 09.9	.....	.....
16	Coal Banks	49 51 26.30	25.59	4,026.33	331 56 11.2	.....	.....
13	Shanks	92 07 49.71	48.09	4,997.89	59 49 31.1	47 59 54.58	110 14 21.10
		3.38	0.00				
16	Coal Banks	80 17 53.05	55.77	4,026.33	331 56 11.2	.....	.....
13	Shanks	71 45 58.93	59.44	8,471.83	223 43 18.5	.....	.....
18	Old	27 56 04.15	04.79	8,163.18	71 42 53.5	48 03 12.72	110 09 38.35
		56.13	0.00				
13	Shanks	60 15 33.14	31.79	8,471.83	223 43 18.5	.....	.....
18	Old	53 19 47.74	47.11	8,026.54	350 27 06.6	.....	.....
15	Iron	66 24 41.16	41.10	7,414.68	104 03 08.2	47 58 56.44	110 08 34.14
		2.04	0.00				
18	Old	39 39 45.04	45.01	8,026.54	350 27 01.6	.....	.....
15	Iron	69 42 29.71	29.45	5,430.45	240 10 18.7	.....	.....
20	Sandy	70 37 46.81	45.54	7,980.14	130 50 53.3	48 00 23.84	110 04 46.85
		1.56	0.00				

TABLE I.—*Calculated results of secondary triangulation, &c.*—Continued.

Number.	Stations.	Observed angles.	Adjusted angles.	Distance.	Azimuth.	Latitude.	Longitude.
		° ' "	"	Meters.	° ' "	° ' "	° ' "
15	Iron.....	58 30 58.86	31 00.30	5,430.45	240 10 18.7	.....	.....
20	Sandy.....	73 41 36.27	36.67	6,252.37	346 31 31.1	.....	.....
22	Burned.....	47 47 23.65	23.03	7,036.72	118 45 00.0	47 57 06.97	110 03 36.63
		58.78	0.00				
15	Iron.....	32 52 39.78	40.62	7,036.72	298 41 19.0	.....	.....
22	Burned.....	74 02 08.12	08.68	3,992.58	44 42 51.4	.....	.....
17	White cliffs.....	73 05 08.66	10.70	7,071.21	151 36 00.3	47 55 35.09	110 05 51.95
		56.56	0.00				
22	Burned.....	52 18 06.90	06.57	3,992.58	44 42 51.4	.....	.....
17	White cliffs.....	93 12 33.48	33.27	5,579.00	317 53 44.3	.....	.....
24	Castle.....	34 29 20.31	20.16	7,039.88	172 25 18.0	47 53 21.03	110 02 51.89
		0.69	0.00				
22	Burned.....	34 22 18.71	18.41	7,039.88	352 24 44.8	.....	.....
24	Castle.....	51 50 06.03	05.89	3,983.15	120 35 12.0	.....	.....
19	Wellman.....	93 47 35.57	35.70	5,547.14	206 45 33.8	47 54 26.63	110 05 37.00
		0.31	0.00				
24	Castle.....	70 45 53.52	53.28	3,983.15	120 35 12.0	.....	.....
19	Wellman.....	58 41 26.19	24.87	4,870.70	359 14 34.4	.....	.....
21	Kipps.....	50 32 42.35	41.85	4,407.43	229 47 18.6	47 51 48.93	110 05 33.91
		2.06	0.00				
24	Castle.....	54 36 57.18	58.62	4,407.43	49 49 18.8	.....	.....
21	Kipps.....	76 14 39.92	40.87	4,751.21	306 01 59.5	.....	.....
26	Citadel.....	49 08 21.13	20.51	5,660.49	175 12 37.0	47 50 18.40	110 02 29.14
		58.23	0.00				
21	Kipps.....	44 32 02.19	01.82	4,751.21	306 01 59.5	.....	.....
26	Citadel.....	71 37 50.42	49.94	3,712.58	54 26 26.5	.....	.....
23	La Barge.....	63 50 06.37	08.24	5,023.89	176 34 30.6	47 49 08.47	110 04 54.33
		58.98	0.00				
26	Citadel.....	83 42 07.40	07.39	3,712.58	54 26 26.5	.....	.....
23	La Barge.....	71 49 53.28	52.72	8,909.92	306 14 31.6	.....	.....
25	Wall.....	24 28 01.49	27 59.89	8,517.10	150 46 47.2	47 46 17.77	109 59 09.19
		2.17	0.00				
26	Citadel.....	28 55 07.84	07.94	8,517.10	330 44 19.1	.....	.....
25	Wall.....	69 35 25.54	25.45	4,164.45	220 22 12.6	.....	.....
28	Pinnacles.....	81 29 25.46	26.61	8,071.28	121 53 15.3	47 48 00.48	109 56 59.57
		58.84	0.00				
25	Wall.....	86 23 53.48	55.07	4,164.45	220 22 12.6	.....	.....
28	Pinnacles.....	64 08 46.37	47.98	8,452.14	336 15 00.7	.....	.....
27	Rondeau.....	29 27 15.25	16.95	7,621.24	126 49 44.7	47 43 49.96	109 54 16.21
		55.10	0.00				
28	Pinnacles.....	33 56 11.65	12.29	8,452.14	336 15 00.7	.....	.....
27	Rondeau.....	77 27 35.30	33.36	5,067.90	233 44 34.9	.....	.....
30	Pablos.....	68 36 17.38	14.35	8,861.19	122 23 14.5	47 45 26.96	109 50 59.99
		4.33	0.00				
27	Rondeau.....	36 49 38.51	39.16	5,067.90	233 44 34.9	.....	.....
30	Pablos.....	80 39 18.39	19.74	3,424.16	333 07 40.4	.....	.....
32	Tip Top.....	62 31 00.43	01.10	5,636.76	90 37 34.2	47 43 48.06	109 49 45.72
		57.33	0.00				
27	Rondeau.....	34 36 17.42	18.03	5,636.76	270 34 14.0	.....	.....
32	Tip Top.....	108 59 07.27	06.60	5,393.25	341 38 27.6	.....	.....
29	Arrow.....	36 24 36.06	35.37	8,979.99	125 14 52.5	47 41 02.31	109 48 24.27
		0.75	0.00				
32	Tip Top.....	55 51 40.23	41.24	5,393.25	341 38 27.6	.....	.....
29	Arrow.....	70 36 06.74	08.45	5,550.51	232 15 36.1	.....	.....
34	Plateau.....	53 32 09.12	10.31	6,325.42	105 50 22.2	47 42 52.26	109 44 53.69
		56.09	0.00				
29	Arrow.....	38 16 29.45	28.50	5,550.51	232 15 36.1	.....	.....
34	Plateau.....	89 28 01.20	27 59.56	4,347.77	322 50 12.3	.....	.....
31	Pines.....	52 15 34.34	31.94	7,018.69	90 36 13.5	47 41 00.06	109 42 47.76
		4.99	0.00				
34	Plateau.....	97 17 12.90	12.74	4,347.77	322 50 12.3	.....	.....
31	Pines.....	42 19 29.36	29.70	6,655.71	185 11 15.1	.....	.....
36	Valley.....	40 23 17.31	17.56	4,518.01	45 34 54.2	47 44 34.68	109 42 18.88
		59.57	0.00				
31	Pines.....	63 43 05.86	05.96	6,655.71	185 11 15.1	.....	.....
36	Valley.....	58 29 25.31	25.97	7,053.07	306 42 10.5	.....	.....
33	Judith.....	57 47 28.52	28.07	6,706.37	68 58 03.1	47 42 18.10	109 37 47.64
		59.69	0.00				
36	Valley.....	55 37 24.74	25.25	7,053.07	306 42 10.5	.....	.....
33	Judith.....	76 14 10.99	10.15	7,816.02	202 59 41.3	.....	.....
38	Council.....	48 08 24.91	24.60	9,198.08	71 09 54.4	47 46 11.04	109 35 21.00
		0.64	0.00				
33	Judith.....	52 40 39.42	39.45	7,816.02	202 59 41.3	.....	.....
38	Council.....	64 39 34.11	34.26	6,997.00	318 21 55.6	.....	.....
35	Holmes.....	62 39 45.89	46.29	7,952.03	75 44 54.4	47 43 21.66	109 31 37.94
		59.42	0.00				

TABLE I.—*Calculated results of secondary triangulation, &c.*—Continued.

Number.	Stations.	Observed angles.	Adjusted angles.	Distance.	Azimuth.	Latitude.	Longitude.
		° ' "	"	Meters.	° ' "	° ' "	° ' "
38	Council	28 35 10.19	09.59	6,997.00	318 21 55.6	.....	.....
35	Holmes	54 31 40.59	39.18	3,372.22	192 56 19.7	.....	.....
40	Iron City.....	96 53 13.51	11.23	5,739.73	109 49 57.8	47 45 08.07	109 31 01.69
		4.29	0.00				
35	Holmes	60 59 42.17	42.20	3,372.22	192 56 19.7	.....	.....
40	Iron City.....	87 16 43.01	43.03	5,608.43	285 40 03.5	.....	.....
42	Bear	31 43 35.16	34.77	6,405.50	73 59 40.5	47 44 18.95	109 26 42.50
		0.34	0.00				
35	Holmes	36 53 15.86	15.61	6,405.50	253 56 01.9	.....	.....
42	Bear	54 27 24.69	25.00	3,845.93	19 32 15.5	.....	.....
37	Gallatin.....	88 39 18.93	19.39	5,213.45	110 52 10.5	47 42 21.59	109 27 44.20
		59.48	0.00				
42	Bear	95 40 57.42	55.99	3,845.93	19 32 15.5	.....	.....
37	Gallatin.....	54 09 17.50	17.13	7,616.55	253 40 47.0	.....	.....
39	Dauphin	30 09 46.54	46.88	6,204.47	103 54 53.4	47 43 30.74	109 21 53.44
		1.46	0.00				
42	Bear	44 11 20.15	17.70	6,204.47	283 51 19.5	.....	.....
39	Dauphin	61 45 46.13	47.20	4,497.80	165 40 40.6	.....	.....
44	Rapids.....	74 02 54.65	55.10	5,685.03	59 42 56.1	47 45 51.84	109 22 46.87
		0.93	0.00				
39	Dauphin	34 39 13.46	13.55	4,497.80	165 40 40.6	.....	.....
44	Rapids.....	114 13 00.51	01.30	4,947.13	231 26 59.7	.....	.....
46	Lone Pine.....	31 07 43.88	45.15	7,934.65	20 21 32.2	47 47 31.63	109 19 40.98
		57.85	0.00				
39	Dauphin	35 46 19.65	19.87	7,934.65	200 19 54.1	.....	.....
46	Lone Pine.....	86 19 34.60	34.40	5,475.26	294 01 57.8	.....	.....
41	Chimney	57 54 06.21	05.73	9,347.19	56 10 49.9	47 46 19.36	109 15 40.81
		0.46	0.00				
46	Lone Pine.....	32 25 46.46	46.70	5,475.26	294 01 57.8	.....	.....
41	Chimney	118 43 23.29	23.17	6,085.64	232 48 18.8	.....	.....
48	Windsor	23 50 49.72	50.13	9,951.85	81 42 01.5	47 48 18.41	109 11 47.83
		59.47	0.00				
41	Chimney	46 17 56.51	56.49	6,085.64	232 48 18.8	.....	.....
48	Windsor	91 06 30.91	31.51	6,500.87	321 44 39.8	.....	.....
43	Birds.....	42 35 31.01	32.00	8,990.41	99 11 30.9	47 45 33.08	109 08 34.56
		58.43	0.00				
48	Windsor	53 44 35.39	35.25	6,500.87	321 44 39.8	.....	.....
43	Birds.....	83 13 57.07	56.69	7,682.88	225 00 59.6	.....	.....
50	Sturgeon.....	43 01 26.71	28.06	9,461.31	88 05 41.1	47 48 28.85	109 04 13.39
		59.17	0.00				
43	Birds.....	37 13 51.69	51.70	7,682.88	225 00 59.6	.....	.....
50	Sturgeon.....	69 23 34.25	34.27	4,851.12	335 40 38.7	.....	.....
45	Spruce	73 22 35.12	34.03	7,504.98	82 19 15.8	47 46 05.71	109 02 37.43
		1.06	0.00				
50	Sturgeon.....	73 43 46.62	47.95	4,851.12	335 40 38.7	.....	.....
45	Spruce	67 15 47.69	48.59	7,398.74	222 57 38.4	.....	.....
52	Snake Point....	39 00 22.94	23.46	7,108.48	82 01 01.4	47 49 00.95	108 58 35.05
		57.25	0.00				
45	Spruce	58 42 09.73	11.26	7,398.74	222 57 38.4	.....	.....
52	Snake Point....	54 10 29.68	29.77	6,861.91	348 50 08.1	.....	.....
47	Cow Island.....	67 07 17.79	18.97	6,511.16	101 43 36.4	47 45 22.98	108 57 31.26
		57.20	0.00				
52	Snake Point....	31 15 37.59	39.43	6,861.91	348 50 08.1	.....	.....
47	Cow Island.....	82 10 47.31	48.42	3,881.20	251 01 43.8	.....	.....
54	Landing.....	66 33 31.05	32.15	7,409.59	137 37 26.4	47 46 03.80	108 54 35.00
		55.95	0.00				
47	Cow Island.....	73 32 52.97	52.27	3,881.20	251 01 43.8	.....	.....
54	Landing.....	66 14 20.82	20.31	5,765.32	4 49 33.9	.....	.....
49	Bend.....	40 12 48.31	47.42	5,501.89	144 36 29.2	47 42 57.78	108 54 58.27
		2.10	0.00				
54	Landing.....	58 09 04.66	05.21	5,765.32	4 49 33.9	.....	.....
49	Bend.....	57 09 02.28	01.41	5,416.97	241 58 18.1	.....	.....
56	Fortress.....	64 41 52.69	53.38	5,357.35	126 43 01.3	47 44 20.14	108 51 08.76
		59.63	0.00				
49	Bend.....	61 50 19.38	19.46	5,416.97	241 58 18.1	.....	.....
56	Fortress.....	44 26 48.74	48.17	4,975.33	17 34 19.7	.....	.....
51	Crystal.....	73 42 52.47	52.37	3,951.76	123 50 34.0	47 41 46.56	108 52 20.80
		0.59	0.00				
56	Fortress.....	67 14 24.54	24.60	4,975.33	17 34 19.7	.....	.....
51	Crystal.....	70 06 53.80	53.50	6,772.29	267 40 19.9	.....	.....
58	Grand Island.....	42 38 40.72	41.90	6,906.26	130 23 01.8	47 41 55.34	108 46 56.26
		59.06	0.00				
51	Crystal.....	42 19 01.04	02.15	6,772.29	267 40 19.9	.....	.....
58	Grand Island.....	55 39 19.61	19.56	4,603.83	32 05 00.3	.....	.....
53	Quarter.....	82 01 38.26	38.29	5,646.19	130 01 55.4	47 39 49.02	108 48 53.46
		58.91	0.00				

TABLE I.—*Calculated results of secondary triangulation, &c.—Continued.*

Number.	Stations.	Observed angles.	Adjusted angles.	Distance.	Azimuth.	Latitude.	Longitude.
		° ' "	"	Meters.	° ' "	° ' "	° ' "
58	Grand Island.....	77 41 33.22	33.49	4,603.83	32 05 00.3	.....	.....
53	Quarter	51 34 27.59	26.73	5,809.83	263 38 00.4	.....	.....
60	Willow.....	50 43 58.09	59.78	4,658.55	134 25 24.8	47 40 09.79	108 44 16.69
		58.90	0.00				
53	Quarter	38 25 20.65	19.60	5,809.83	263 38 00.4	.....	.....
60	Willow.....	87 36 25.48	26.19	4,464.50	356 04 58.8	.....	.....
55	Calf Island.....	53 58 14.60	14.21	7,177.76	122 06 55.4	47 37 45.57	108 44 02.09
		0.73	0.00				
60	Willow.....	55 36 37.52	37.63	4,464.50	356 04 58.8	.....	.....
55	Calf Island.....	71 31 54.62	54.58	4,621.74	247 37 04.1	.....	.....
62	Buffalo.....	52 51 27.94	27.79	5,312.20	120 31 03.2	47 38 42.50	108 40 37.33
		0.08	0.00				
55	Calf Island.....	46 52 06.46	06.83	4,621.74	247 37 04.1	.....	.....
62	Buffalo.....	91 55 12.61	13.11	5,119.45	335 44 22.3	.....	.....
57	Armel.....	41 12 39.17	40.06	7,011.07	114 32 56.6	47 36 11.37	108 38 56.63
		58.24	0.00				
62	Buffalo.....	51 16 28.90	28.54	5,119.45	335 44 22.3	.....	.....
57	Armel.....	72 47 10.25	10.80	4,821.03	228 32 47.5	.....	.....
64	Harriet.....	55 56 21.62	20.66	5,902.79	104 31 16.0	47 37 54.67	108 36 03.55
		0.77	0.00				
57	Armel.....	52 53 27.41	29.32	4,821.03	228 32 47.5	.....	.....
64	Harriet.....	48 28 07.70	07.65	3,921.56	00 06 47.6	.....	.....
59	Brevier.....	78 38 21.26	23.03	3,681.12	101 28 24.3	47 35 47.70	108 36 03.93
		56.37	0.00				
64	Harriet.....	82 00 36.02	36.70	3,921.56	00 06 47.6	.....	.....
59	Brevier.....	71 38 44.11	44.73	8,751.31	251 45 32.1	.....	.....
66	Creek.....	26 20 37.66	38.57	8,387.53	98 11 04.7	47 37 16.20	108 29 25.88
		57.79	0.00				
59	Brevier.....	28 14 05.74	05.22	8,751.31	251 45 32.1	.....	.....
66	Creek.....	91 02 34.38	33.17	4,746.40	340 47 52.9	.....	.....
61	Rocky Point.....	60 43 24.15	21.61	10,031.22	100 05 26.4	47 34 51.06	108 28 11.18
		4.27	0.00				
66	Creek.....	52 46 48.96	50.20	4,746.40	340 47 52.9	.....	.....
61	Rocky Point.....	78 46 31.82	31.39	5,050.95	239 35 19.4	.....	.....
68	Autumn.....	48 26 36.81	38.41	6,221.50	108 04 31.8	47 36 13.79	108 24 42.64
		57.59	0.00				
61	Rocky Point.....	44 47 28.61	28.85	5,050.95	239 35 19.4	.....	.....
68	Autumn.....	37 26 05.11	06.14	3,591.53	22 11 47.2	.....	.....
63	Lopp.....	97 46 23.97	25.01	3,098.76	104 24 34.3	47 34 26.12	108 25 47.56
		57.69	0.00				
68	Autumn.....	61 09 38.25	38.03	3,591.53	22 11 47.2	.....	.....
63	Lopp.....	87 39 22.87	22.34	6,076.13	289 50 21.6	.....	.....
65	Carroll.....	31 10 59.62	59.63	6,930.62	141 04 43.1	47 33 19.26	108 21 14.19
		0.74	0.00				
68	Autumn.....	33 16 24.02	23.83	6,930.62	321 02 09.2	.....	.....
65	Carroll.....	56 58 20.01	19.34	3,802.39	198 03 02.4	.....	.....
70	Ryan.....	89 45 18.01	16.83	5,810.72	107 49 00.8	47 35 16.31	108 20 17.80
		2.04	0.00				
65	Carroll.....	61 43 18.97	18.80	3,802.39	198 03 02.4	.....	.....
70	Ryan.....	80 59 39.74	39.40	5,527.89	297 04 04.6	.....	.....
67	Ryan Island.....	37 17 01.26	01.80	6,199.62	79 49 56.6	47 23 54.80	108 16 22.32
		59.97	0.00				
70	Ryan.....	32 44 34.64	35.69	5,527.89	297 04 04.6	.....	.....
67	Ryan Island.....	70 30 13.51	14.91	3,071.63	187 37 13.3	.....	.....
72	Plain.....	76 45 07.32	09.40	5,353.41	84 22 37.1	47 35 33.38	108 16 02.82
		55.47	0.00				
67	Ryan Island.....	88 52 42.00	41.11	3,071.63	187 37 13.3	.....	.....
72	Plain.....	58 38 36.76	36.13	5,719.05	308 58 51.5	.....	.....
69	Sage.....	32 28 42.42	42.76	4,884.69	96 32 45.8	47 33 36.83	108 12 30.17
		1.18	0.00				
72	Plain.....	36 02 47.44	46.97	5,719.05	308 58 51.5	.....	.....
69	Sage.....	94 39 32.55	33.01	4,439.31	223 41 01.5	.....	.....
74	Kannuck.....	49 17 39.82	40.02	7,519.28	93 00 29.9	47 35 20.75	108 10 03.42
		59.81	0.00				
69	Sage.....	46 15 19.42	19.08	4,439.31	223 41 01.5	.....	.....
74	Kannuck.....	85 40 40.35	38.79	4,311.00	318 02 11.1	.....	.....
71	Line.....	48 04 02.43	02.13	5,950.41	89 59 50.7	47 33 36.94	108 07 45.53
		2.20	0.00				
74	Kannuck.....	36 55 10.15	10.38	4,311.00	318 02 11.1	.....	.....
71	Line.....	88 43 26.49	27.11	3,186.57	226 47 20.0	.....	.....
73	Across.....	54 21 25.66	22.51	5,303.50	101 10 04.6	47 34 47.57	108 05 54.40
		2.30	0.00				
74	Kannuck.....	42 42 10.49	12.04	5,303.50	281 07 00.7	.....	.....
73	Across.....	79 36 31.20	30.50	4,255.86	180 46 35.1	.....	.....
76	Hawley.....	57 41 14.21	17.46	6,172.28	58 27 54.5	47 37 05.36	108 05 51.63
		55.90	0.00				

TABLE I.—*Calculated results of secondary triangulation, &c.*—Continued.

Number.	Stations.	Observed angles.	Adjusted angles.	Distance.	Azimuth.	Latitude.	Longitude.
		° ' "	"	Meters.	° ' "	° ' "	° ' "
73	Across	76 16 24.97	26.19	4,255.86	180 46 35.1	.....	.....
76	Hawley	61 55 16.24	16.79	6,202.13	298 51 20.2	.....	.....
78	Frost	41 48 17.38	17.02	5,633.03	77 06 15.1	47 35 28.36	108 01 21.64
		58.59	0.00				
73	Across	31 20 20.80	22.77	5,633.03	257 03 01.1	.....	.....
78	Frost	92 14 36.66	36.80	3,516.80	344 51 38.3	.....	.....
75	Slide	56 24 58.50	25 00.43	6,756.48	108 27 10.3	47 33 38.44	108 00 47.71
		55.96	0.00				
78	Frost	63 36 18.45	19.05	3,516.80	344 51 38.3	.....	.....
75	Slide	82 20 43.04	43.41	5,626.25	247 12 54.1	.....	.....
80	Lake	34 02 56.69	57.54	6,225.07	101 18 54.9	47 34 48.91	107 56 39.49
		58.18	0.00				
75	Slide	35 58 48.63	49.85	5,626.25	247 12 54.1	.....	.....
80	Lake	43 13 15.39	15.41	3,365.06	24 02 41.9	.....	.....
77	Pike	100 47 54.24	54.74	3,922.39	103 13 58.8	47 33 09.41	107 57 45.06
		58.26	0.00				
80	Lake	81 46 56.26	56.04	3,365.06	24 02 41.9	.....	.....
77	Pike	46 55 22.86	22.21	4,267.82	250 57 15.7	.....	.....
82	Cut-off	51 17 41.22	41.75	3,149.70	122 17 19.9	47 33 54.46	107 54 32.07
		0.34	0.00				
77	Pike	48 50 20.67	20.43	4,267.82	250 57 15.7	.....	.....
82	Cut-off	74 56 10.69	11.32	3,865.48	356 03 26.8	.....	.....
79	Above	56 13 27.85	28.25	4,957.96	119 50 07.9	47 31 49.59	107 54 19.37
		59.21	0.00				
82	Cut-off	56 27 37.95	38.43	3,865.48	356 03 26.8	.....	.....
79	Above	81 03 27.65	28.22	4,770.69	257 07 04.4	.....	.....
84	Hornets	42 28 52.94	53.35	5,654.07	119 38 41.8	47 32 23.97	107 50 37.00
		58.54	0.00				
79	Above	41 46 13.31	14.43	4,770.69	257 07 04.4	.....	.....
84	Hornets	84 31 38.51	38.86	3,943.17	352 38 09.5	.....	.....
81	Below	53 42 05.69	06.71	5,892.38	118 56 20.6	47 30 17.34	107 50 12.85
		57.51	0.00				
84	Hornets	29 39 34.76	35.22	3,943.17	352 38 09.5	.....	.....
81	Below	86 38 30.19	30.88	2,176.61	259 16 58.2	.....	.....
83	Nest	63 41 53.32	53.90	4,390.98	143 00 07.5	47 30 30.44	107 48 30.65
		58.27	0.00				
84	Hornets	83 03 24.19	25.73	4,390.98	322 58 34.3	.....	.....
83	Nest	54 10 30.58	32.00	6,419.19	197 10 39.5	.....	.....
86	Wilson	42 46 01.52	02.27	5,243.22	59 57 48.7	47 33 49.01	107 46 59.95
		56.29	0.00				
83	Nest	36 12 09.40	08.13	6,419.19	197 10 39.5	.....	.....
86	Wilson	84 51 41.19	40.74	4,426.13	292 20 05.6	.....	.....
85	Track	58 56 12.58	11.13	7,463.72	53 26 19.0	47 32 54.50	107 43 44.16
		3.17	0.00				
86	Wilson	69 57 22.07	23.56	4,426.13	292 20 05.6	.....	.....
85	Track	64 23 52.91	53.79	5,815.25	176 46 23.9	.....	.....
88	Elk	45 38 42.62	42.65	5,582.41	42 24 55.0	47 36 02.50	107 43 59.83
		57.60	0.00				
85	Track	38 29 53.95	54.02	5,815.25	176 46 23.9	.....	.....
88	Elk	79 11 51.74	51.83	4,088.36	277 34 20.5	.....	.....
87	Horn	62 18 13.62	14.15	6,451.36	35 18 29.6	47 35 45.01	107 40 45.84
		59.31	0.00				
88	Elk	53 09 51.17	53.88	4,088.36	277 34 20.5	.....	.....
87	Horn	95 09 08.58	09.53	6,230.20	192 45 53.3	.....	.....
90	Forgey	31 40 57.26	56.59	7,752.75	44 27 38.6	47 39 01.75	107 39 39.87
		57.01	0.00				
87	Horn	54 09 57.05	56.46	6,230.20	192 45 53.3	.....	.....
90	Forgey	47 46 57.60	58.63	5,162.75	324 59 43.3	.....	.....
89	Trovers	78 03 04.71	04.91	4,716.30	66 58 23.2	47 36 44.79	107 37 18.07
		59.36	0.00				
88	Elk	49 57 52.81	55.31	4,088.36	277 34 20.5	.....	.....
87	Horn	66 39 45.11	46.73	3,501.68	164 16 30.5	.....	.....
W.	West Base	63 22 16.13	17.96	4,199.29	47 38 14.9	47 37 34.14	107 41 31.29
		54.05	0.00				
87	Horn	39 02 35.41	34.84	3,501.68	164 16 30.5	.....	.....
W.	West Base	92 46 45.27	46.63	2,959.84	251 29 10.2	.....	.....
E.	East Base	48 10 37.82	38.53	4,693.37	23 20 11.0	47 38 04.55	107 39 16.84
		58.50	0.00				

TABLE I.—*Calculated results of secondary triangulation, &c.—Continued.*
Additional stations located.

Number.	Stations.	Observed angles.	Adjusted angles.	Distance.	Azimuth.	Latitude.	Longitude.
	<i>At Benton.</i>	° ' "	"	<i>Meters.</i>	° ' "	° ' "	° ' "
	East Base	89 54	10	3,008.06	73 01 05.7	.....	.....
	West Base	11 04	25	3,064.11	264 03 48	.....	.....
	Hub.....	79 01	25	588.52	163 07 02	47 50 07.77	110 39 54.78
			00				
	Hub.....	43 14	20	3,064.11	84 05 37	.....	.....
	West Base	85 10	30	2,678.85	349 14 17	.....	.....
2	Benton	51 35	10	3,896.73	220 49 45	.....	.....
			00				
	Hub.....	43 54	05	3,896.73	40 51 17	.....	.....
2	Benton	37 48	15	2,730.63	258 38 00	.....	.....
	Flag staff, Fort Benton	98 17	40	2 413.80	176 57 16	47 48 50	110 39 48
			00				
	<i>At Mussel Shell.</i>						
79	Above	82 49	24.16	5,892.38	298 53 18.8	.....	.....
81	Below	36 06	49.73	6,680.24	82 49 30.9	.....	.....
	Raid	61 03	46.11	3,968.36	201 41 51.2	47 29 50.21	107 55 29.51
			0.00				
79	Above.....	76 37	32.01	5,892.38	298 53 18.8	.....	.....
81	Below	56 57	49.29	7,914.62	61 58 31.3	.....	.....
	Cow Boy	46 24	38.70	6,819.99	195 29 46.6	47 28 16.80	107 55 46.48
			0.00				
79	Above	29 06	03.90	5,892.38	298 53 18.8	.....	.....
81	Below.....	66 08	49.75	2,877.83	52 47 30.9	.....	.....
	Williams	84 45	06.35	5,411.78	148 01 03.8	47 29 20.98	107 52 02.33
			0.00				
79	Above	60 39	13.63	5,892.38	298 53 18.8	.....	.....
81	Below	85 40	14 82	9,263.03	33 16 05.8	.....	.....
	Mussel Shell	33 40	31.55	10,596.39	179 32 35.4	47 26 06.49	107 54 15.33
			0.00				

TABLE II.

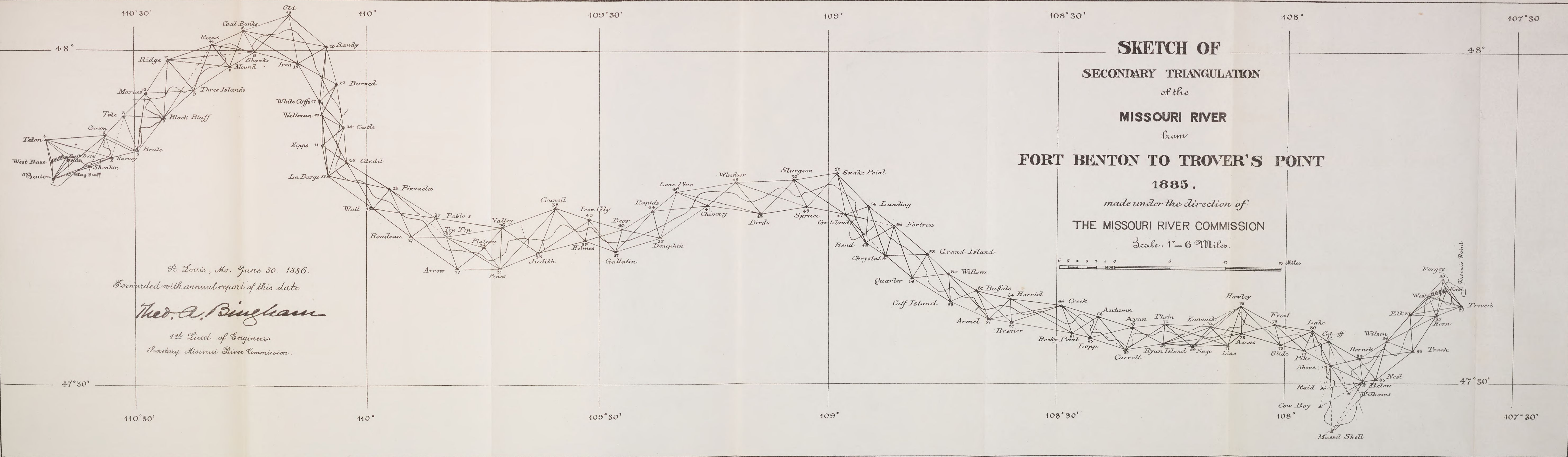
[Instrument, Troughton & Simms's 10-inch theodolite, No. 1.]

Azimuth at east base, Fort Benton. Azimuth of line east base—west base.			
Observer.	Star, date, &c.	Result for star.	Resulting azimuth.
		° ' "	° ' "
D. C. Humphreys .	Polaris near eastern elong., July 19, 1885	73 01 04.26	.....
Do.....	Polaris near eastern elong., July 20, 1885	73 01 04.17	.....
Do.....	Polaris near eastern elong., July 23, 1885	73 01 08.76	73 01 05.73
Azimuth at west base, Trover's Point base line. Azimuth of line west base—east base.			
Bathurst Smith...	Polaris near eastern elong., Sept. 26, 1885.....	251 29 10.71	.....
Do.....	δ Ursa Minor near western elong., Sept. 26, 1885	251 29 12.11	.....
D. C. Humphreys .	Polaris near eastern elong., Sept. 27 1885.....	251 29 07.71	251 29 10.18

TABLE III.

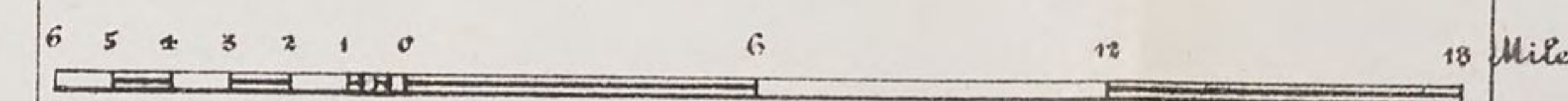
[Instrument, Troughton & Simms's 10-inch theodolite No. 1.]

Latitude of West Base, Trover's Point base line.			
Observer.	Object, date, &c.	Result for object.	Resulting latitude.
		° ' "	° ' "
Bathurst Smith ..	Sun near meridian September 26, 1885	47 38 01.6	.....
D. C. Humphreys.	Polaris near meridian September 27, 1885.....	47 37 54.0	47 37 57.8



SKETCH OF
SECONDARY TRIANGULATION
 of the
MISSOURI RIVER
 from
FORT BENTON TO TROVER'S POINT
1885.

made under the direction of
THE MISSOURI RIVER COMMISSION
 Scale: 1" = 6 Miles.



St. Louis, Mo. June 30. 1886.
 Forwarded with annual report of this date
Theo. A. Bingham
 1st Lieut. of Engineers.
 Secretary Missouri River Commission.

APPENDIX A 3.

SECONDARY TRIANGULATION OF MISSOURI RIVER BELOW FORT BENTON.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., March 1, 1886.

SIR: I have the honor to submit the following digest of records on file in this office relative to secondary triangulation along the Missouri River, below Fort Benton, during the year 1885.

Reports of chiefs of party are appended with full details and reductions of base measurements; also tabulated results of leveling.

Very respectfully, your obedient servant,

THEO. A. BINGHAM,
*First Lieutenant of Engineers,
 Secretary Missouri River Commission.*

Maj. C. R. SUTER,
*Corps of Engineers, U. S. A.,
 President Missouri River Commission.*

 DIGEST OF RECORDS.

The intention is to cover the river valley from bluff to bluff with, as far as possible, a quadrilateral system, which has the following advantages over a triangular or hexagonal system:

First. It can be employed to better advantage in a mountainous country than the hexagonal.

Second. Although at the expense of area covered, it is the strongest of the three as regards number of geometrical conditions, and if these are satisfied it gives the greatest relative accuracy.

The distance covered during 1885 was 240 miles along the river, beginning at Fort Benton, July 5, and ending at Trover's Point, Mont., October 1.

Ninety-eight triangulation stations were occupied, determining 200 triangles and 52 quadrilaterals. These stations are all marked permanently. For detailed description see Annual Report Mississippi River Commission for 1883, page 164, and Annual Report Missouri River Commission for 1884-'85, Appendix A 2. Fig. 1, Plate 1, herewith, shows the pipe cap.

More than 50 per cent. of the triangles close within the limit of primary work (3'').

The system depends on two bases, determined one at Fort Benton and the other at Trover's Point.

A single line of levels was run over the distance covered by the work. It was checked in part whenever delays permitted. Seventy-two miles were thus checked out of 241, 17 being continuous.

An elevation was assumed at Fort Benton of 2,700 feet above Saint Louis directrix. The fall of the water-surface from Fort Benton to Trover's Point was found to be 462'.5 or 1'.99 per mile. The fall in the first 140 miles (foot of Cow Island) is 2'.5 per mile. There were two leveling parties, both working down-stream; the up-stream party ending for the day on the bench-mark where the other began. In this way a total of 6 miles a day could be covered.

The total cost of the season's work was \$26,400, or \$110 per mile; not excessive, considering the remoteness of the work.

ORGANIZATION.

The organization of parties, during 1885, was given in Annual Report for 1884-'85 (Appendix A).

During the season defects were developed which can, it is thought, be entirely obviated in future by making the parties engaged on different work independent of each other. Suggestions, given at my request, will be found in Appendices A 3a and A 3b.

BASES.

The Fort Benton base is 1.86 miles long and was measured three times. The first, being only a trial measurement is not included in the adopted result. The second and third measurements differed by 0'.055. The mean of these was adopted, giving a length of 9870'.415, with a probable error of $\pm 0'.0185$, or $\frac{1}{533000}$. Azimuth was determined by three nights, observations on Polaris head elongation. This base was also

connected with United States land surveys and with other known data; and by tertiary triangulation with the flag-staff at Fort Benton, for which the Report on Northern Boundary Survey, 1878, gives: Latitude $47^{\circ} 48' 50''$ north; longitude $110^{\circ} 39' 48''$ west from Greenwich.

Full details of measurement are given in Appendices A 3c and A 3d.

The Trover's Point base is 1.83 miles long and was measured three times. The first measurement was a trial one and was not included in the final result. The second and third differed by 0'.023. The mean of these two was adopted, giving a length of 9711'.904 with a probable error of $\pm 0'.0078$, or $\frac{1}{1250000}$.

Full details are given in Appendices A 3c and A 3e.

Azimuth was determined by three nights' observations on stars near elongation. The approximate latitude was also determined.

To measure bases a steel tape was used, obtained from the Mississippi River Commission. The tape was approximately 299' long. It was marked standard at 62° Fahr., but was known not to be standard at that temperature when under tension to eliminate sags. It was thought to be standard at approximately 36° Fahr. when under tension of 12 pounds. Modulus of elasticity, E, was 27,400,000 pounds. Coefficient of expansion 0'.00000699 for 1° Fahr., as determined by J. B. Johnson for the Mississippi River Commission. In order to determine the lacking information as to the standard temperature under a known tension, the eastern part of the Olney base line (Lake Survey Primary, 1879) was taken as a standard of comparison; its length is known within a limit of $\frac{1}{1013000}$ (Professional Papers No. 24, page 304).

The length of the standard taken is (page 303)	10821'.9662
Length, by tape, under tension of 16 pounds, reduced to 62° Fahr., and for inclination	10819'.0890
Difference	2'.8772

The measurement took 36.184 lengths of the tape; hence ($\frac{2'.8772}{36.184} = 0'.1795$) the tape was 299'.0795 long at 62° Fahr. under tension of 16 pounds. Expansion for 1° Fahr. for 299' being 0'.00209, 24° Fahr. results as the temperature at which the tape is 299' long under pull of 16 pounds. Since 1 pound tension gives an elongation of 0'.00538 and 1° Fahr. an expansion of 0'.00209 for 299', it follows that the effects of tension and expansion are as 1 to 2.57. Therefore since 24° is standard temperature for 16 pounds pull, 62° will be standard for 1.22, or just about enough to haul taut on a table. Also $34^{\circ}.5$ will be standard temperature for the 12 pounds tension used by Johnson in his determinations. Such are the checks on the first result. (Details in Appendices A 3c and A 3f.)

Different, 50-foot lengths on the tape were also compared, and the graduation was found to be very satisfactory. (Details of comparison will be found in Appendix A 3c.)

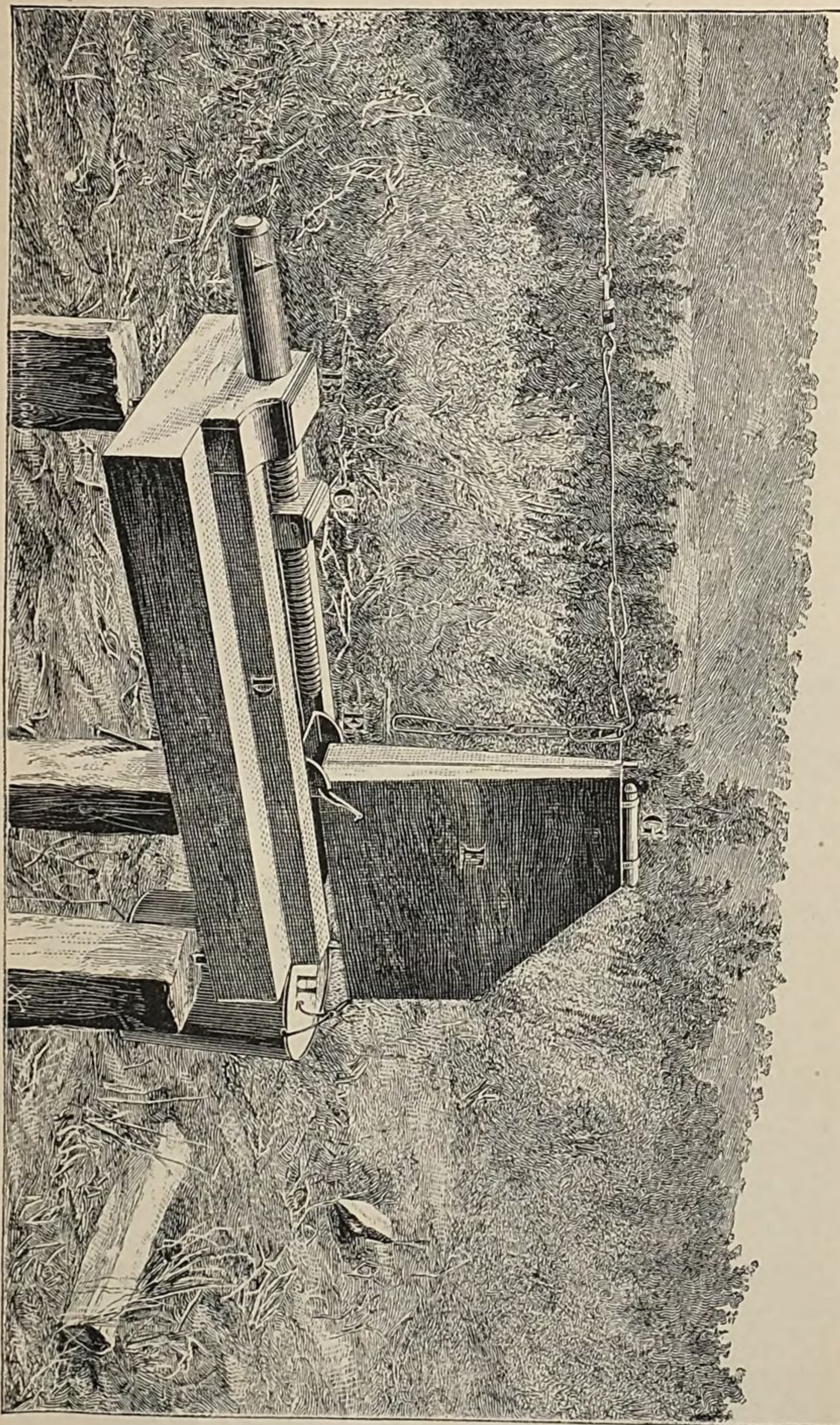
The use of a steel tape, for secondary base measurements, is not new, but has not heretofore proved satisfactory owing mostly to the uncertainty of the temperature correction. Mr. O. B. Wheeler, however, believed that this method could be made satisfactory if care were taken to keep the temperature, during a measurement, nearly constant. To do this he proposed to work only at night, or when the sun was obscured. The first measurement at Fort Benton was made in sunlight. The comparative results can be seen in Appendix A 3c. He also introduced the use of the pieces of zinc on which the measurements were marked off with an engraver's pencil and a square. These zincs are filed as part of the record—an ingenious device. They are long enough to give room for expansion of the tape, but sometimes a set backward or ahead is necessary. Friction is reduced to a minimum by the suspension of the tape in swinging hooks. The tape does not have to be kept level, and so is available for almost any surface and does not require special preparation of the ground other than clearing. A checked line of levels is run to determine correction for inclination.

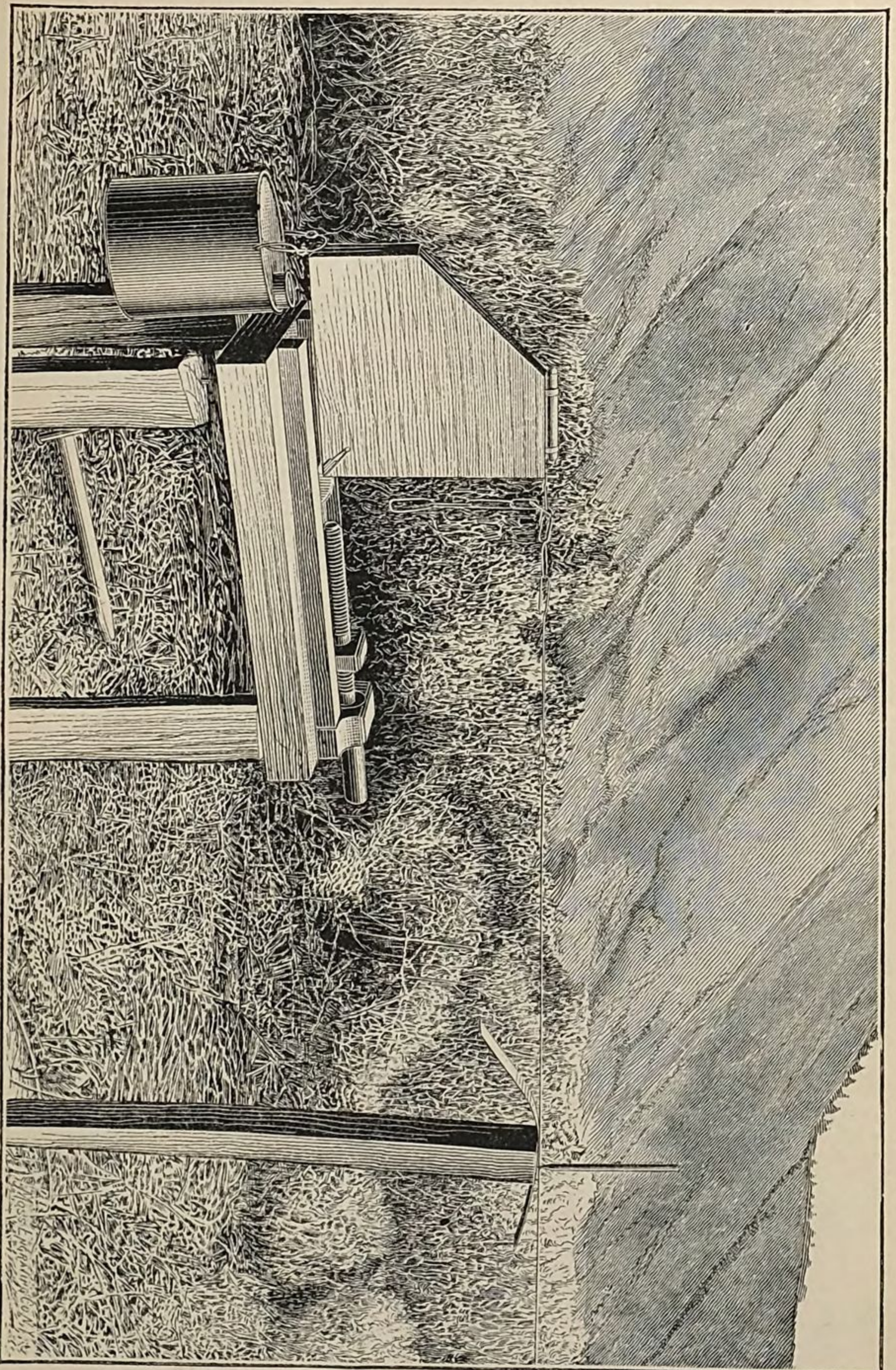
The results show the great accuracy attainable with the steel tape by Mr. Wheeler's method. (See Appendices A 3c, A 3d, A 3e, and A 3f.)

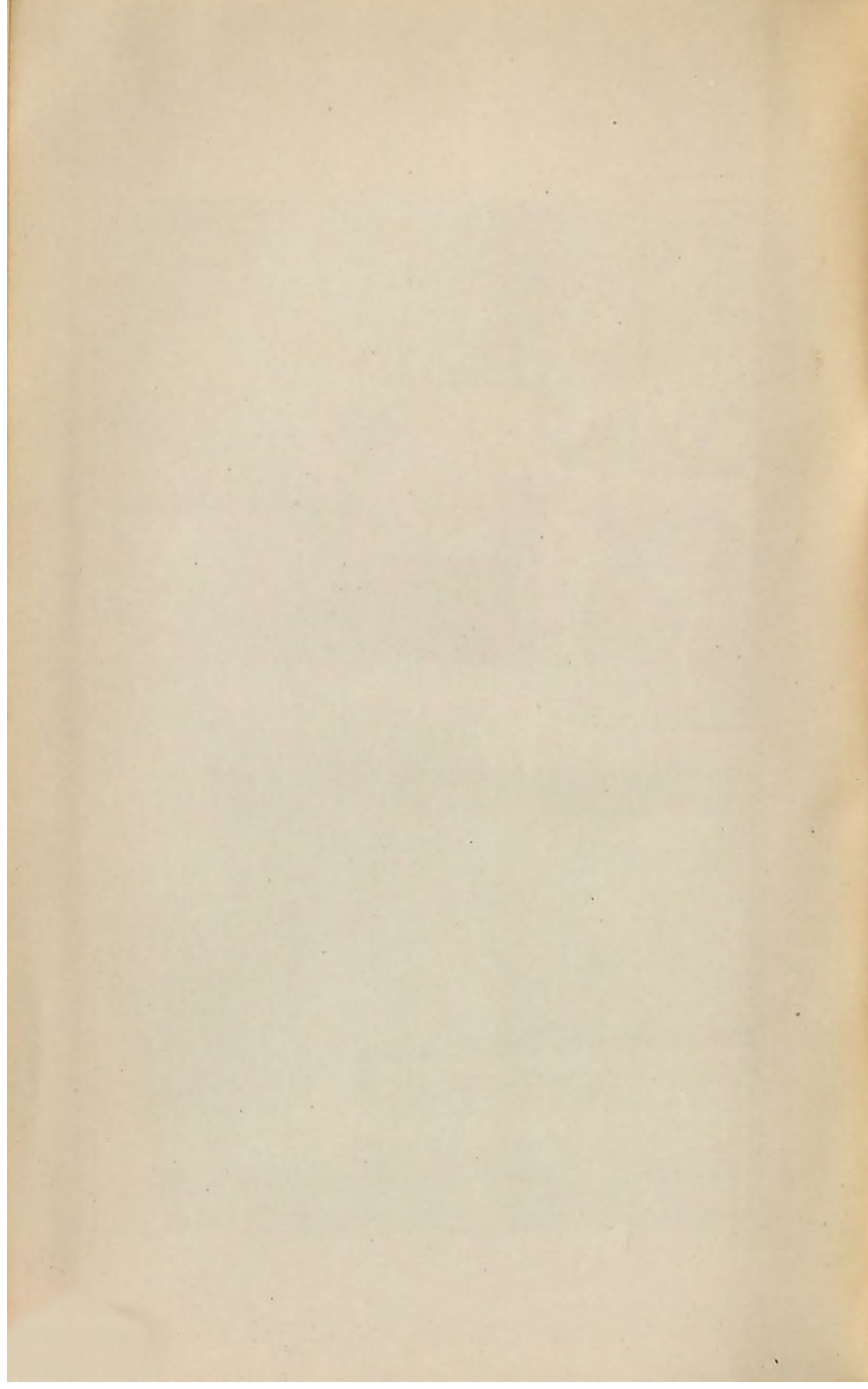
BASE-MEASURING APPARATUS.

(1) *The rear adjuster* (see photographs 303 and 304 and figs. 1 and 2, Plate II).—This consists of a wooden screw, A, fixed in a block, B. The screw by its revolution causes a nut, C, to move along it. The head plate B has dogs fastened in its bottom by which it is secured to the straining stake on which it rests. When in use, the tape is attached to the movable nut C; and a wire guy, about 3 feet long, leads from the rear end of the screw-block B to an iron pin in the ground in rear.

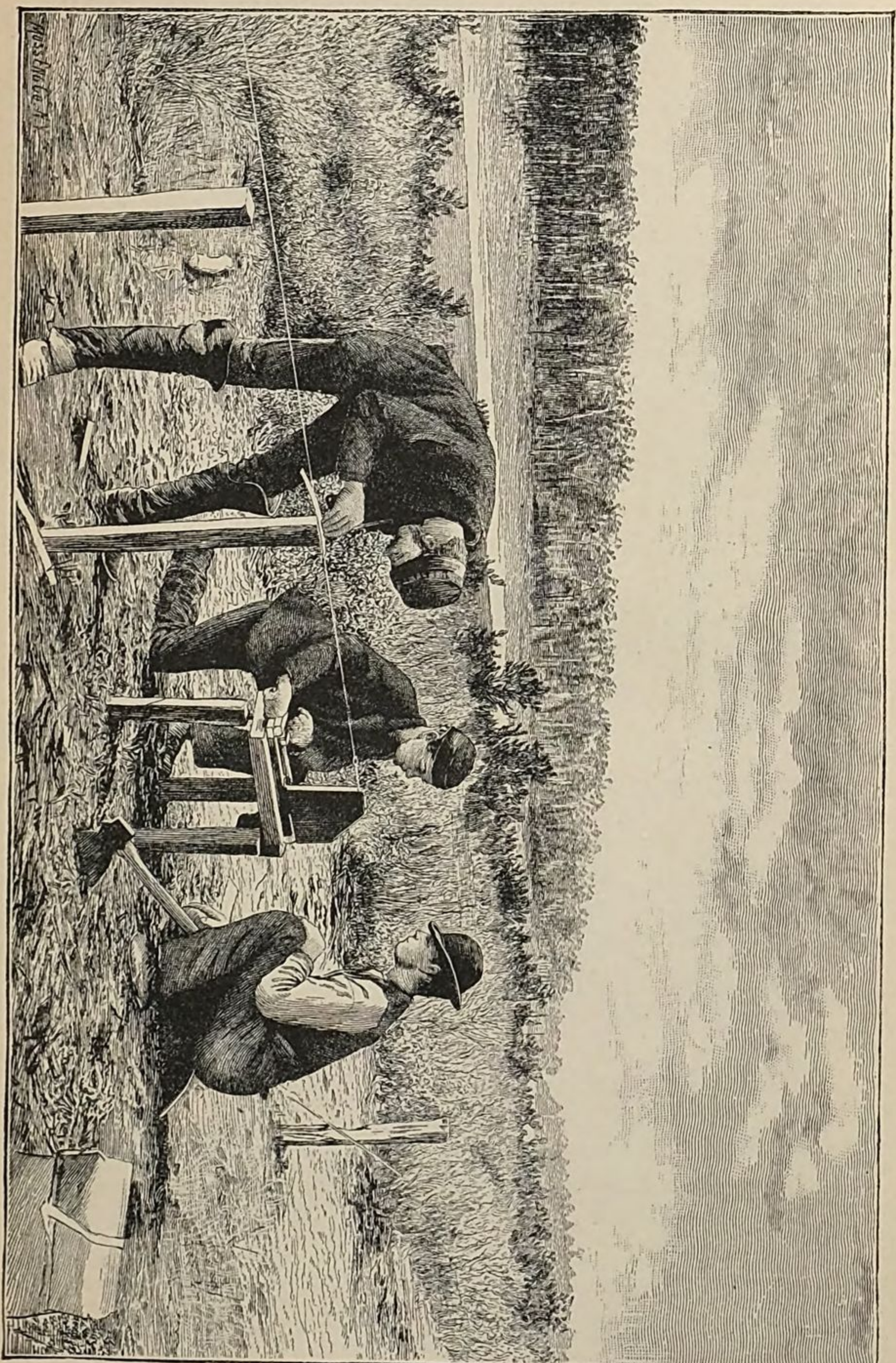
(2) *The front adjuster* (see photographs 300, 301, and 302; figs. 3 and 4, Plate II).—This consists of a wooden screw, A, fixed in a block, B. The screw by its revolution

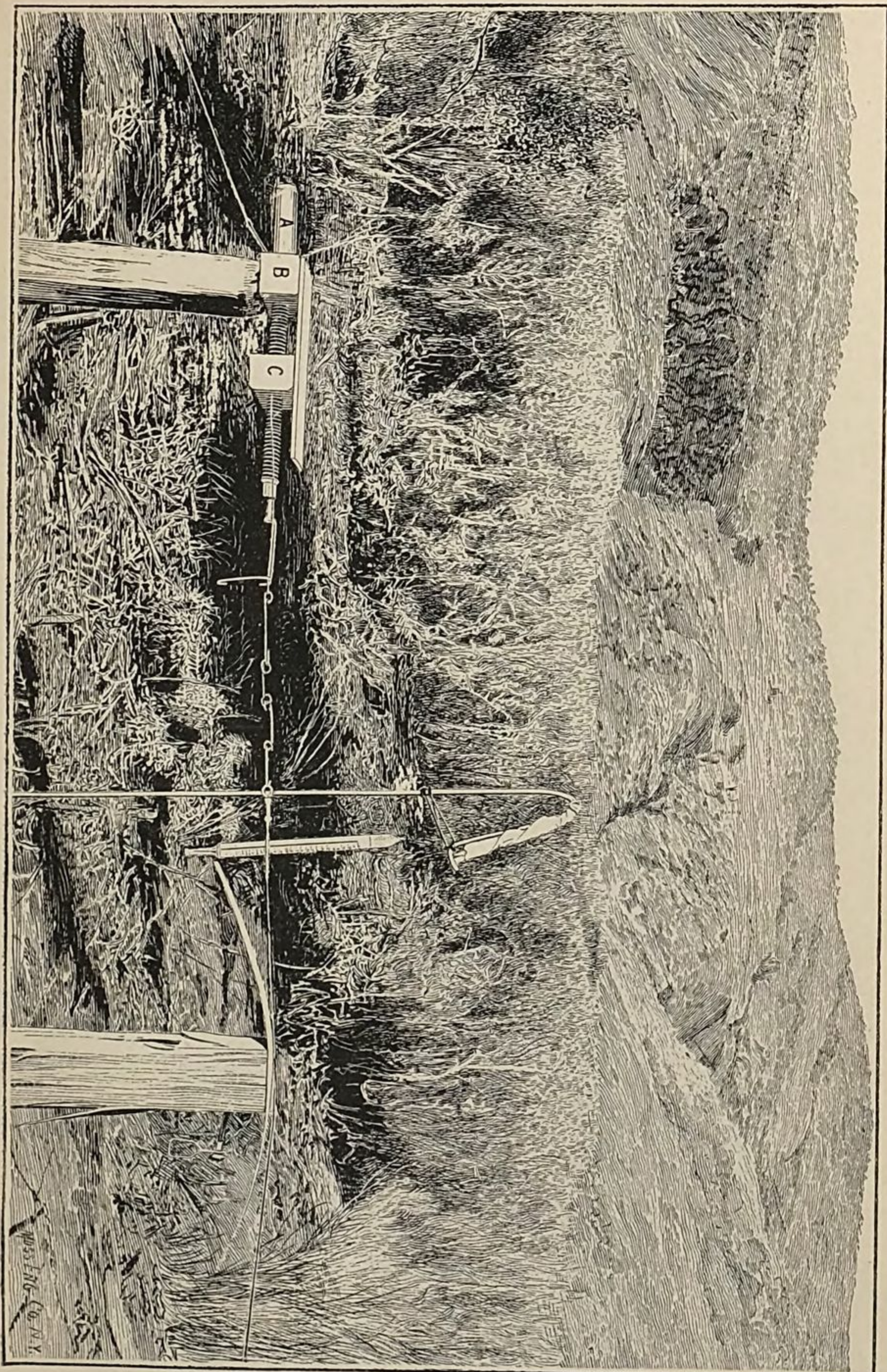


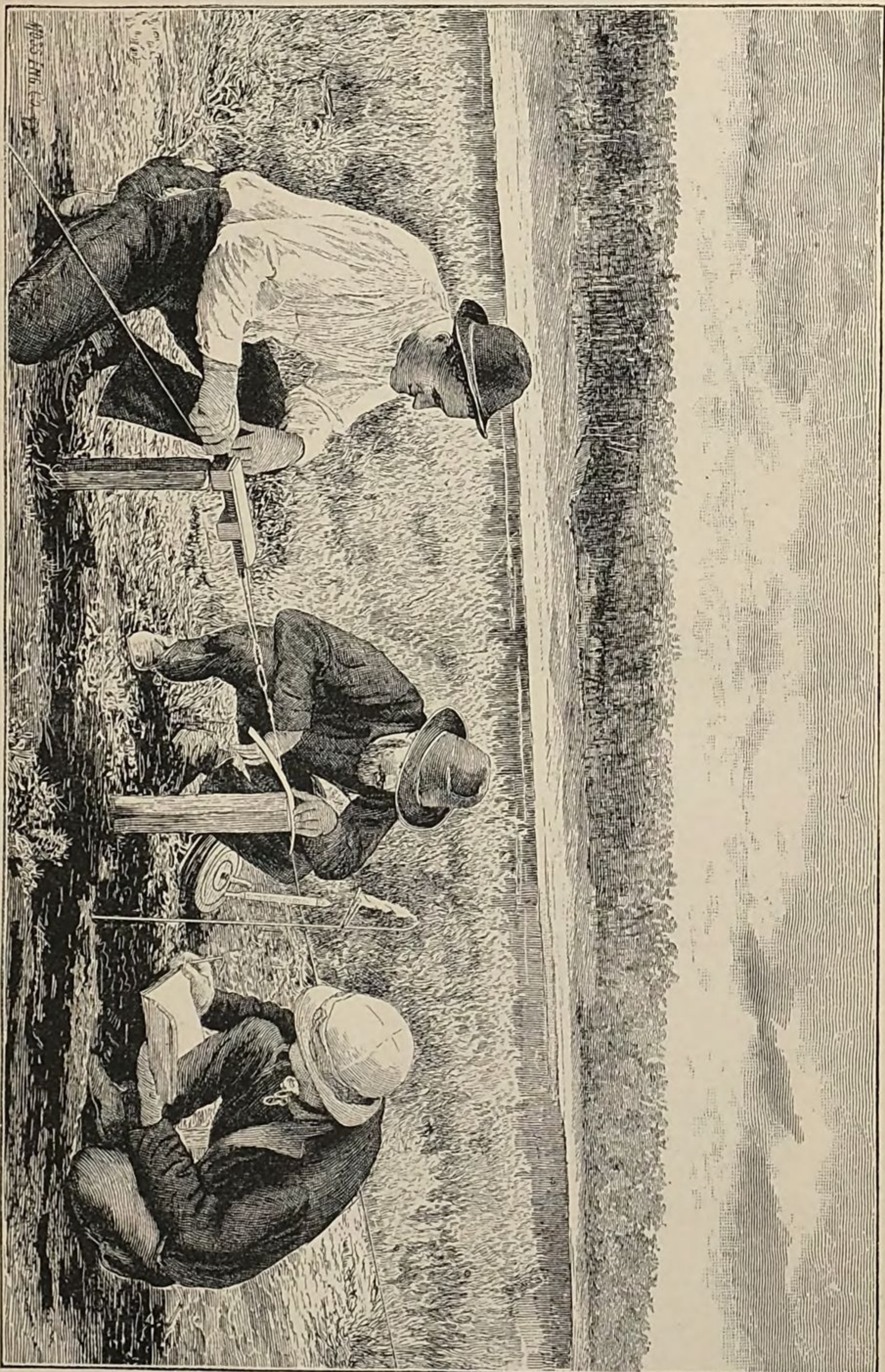


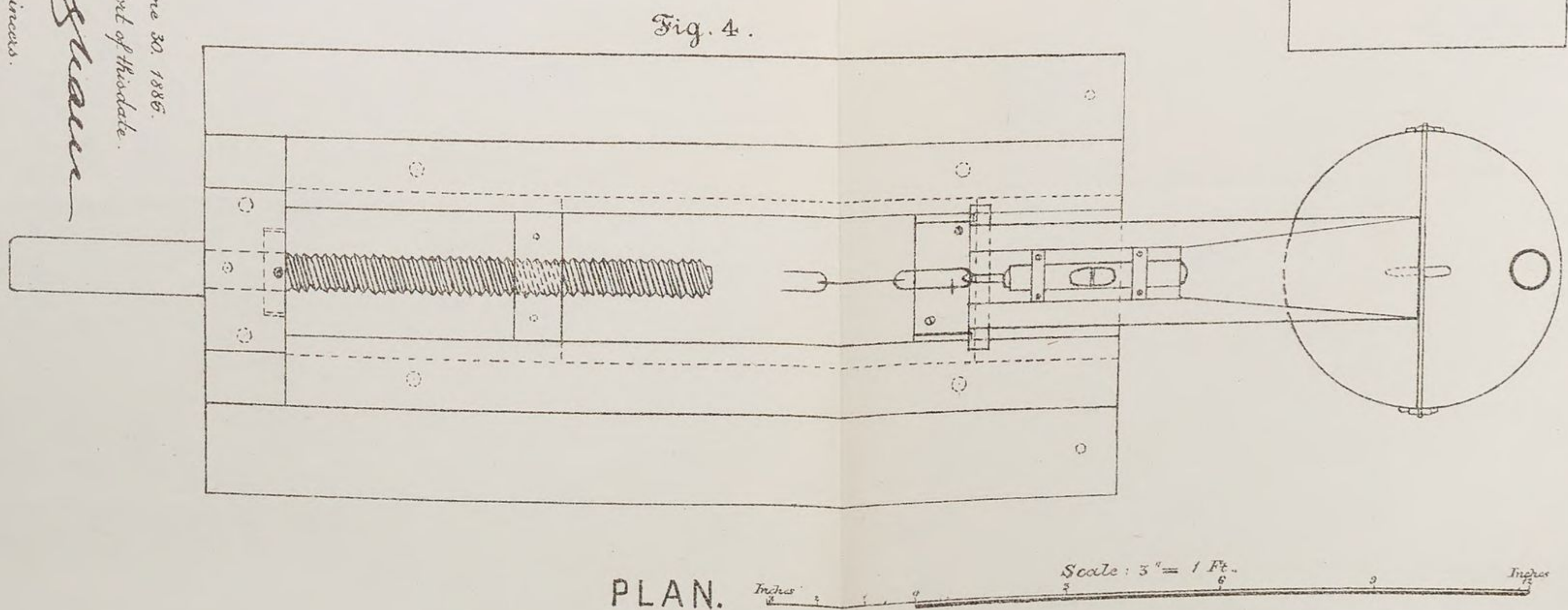
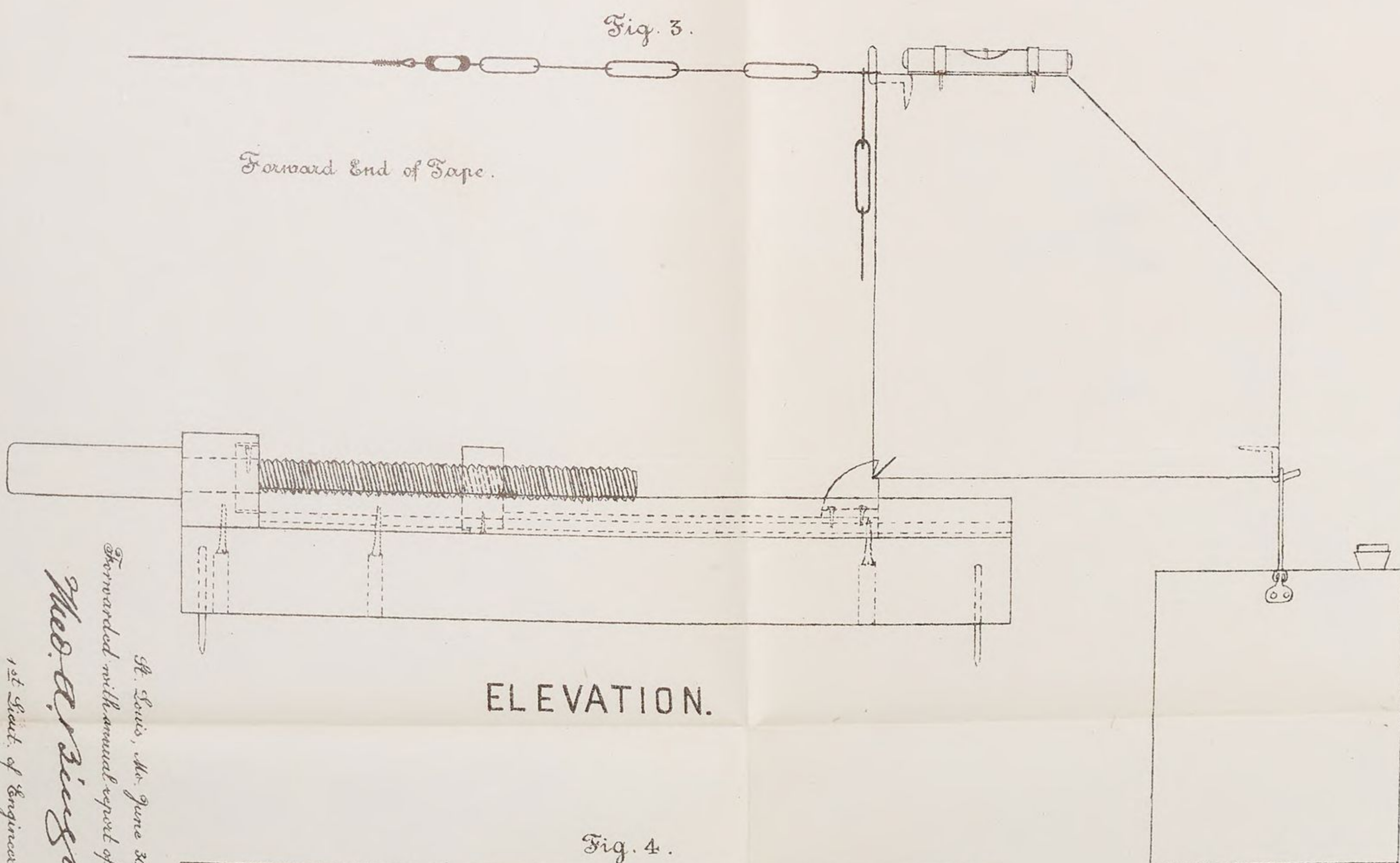
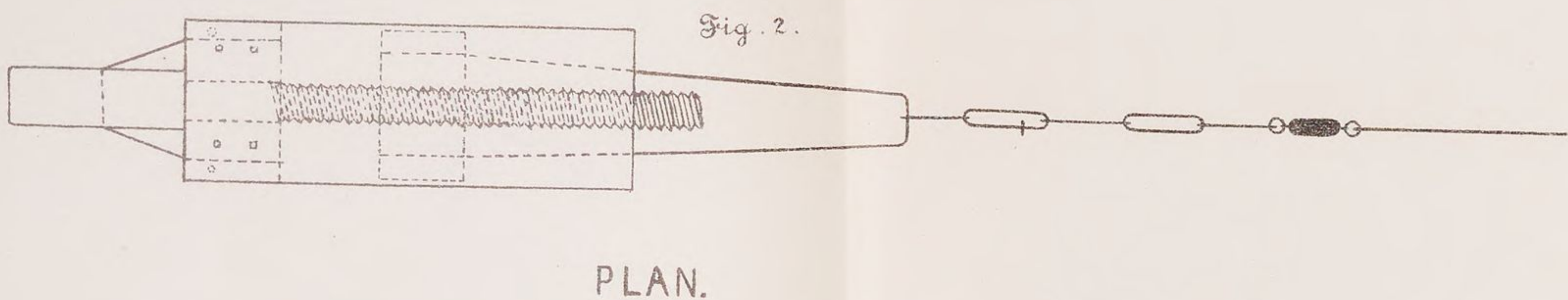
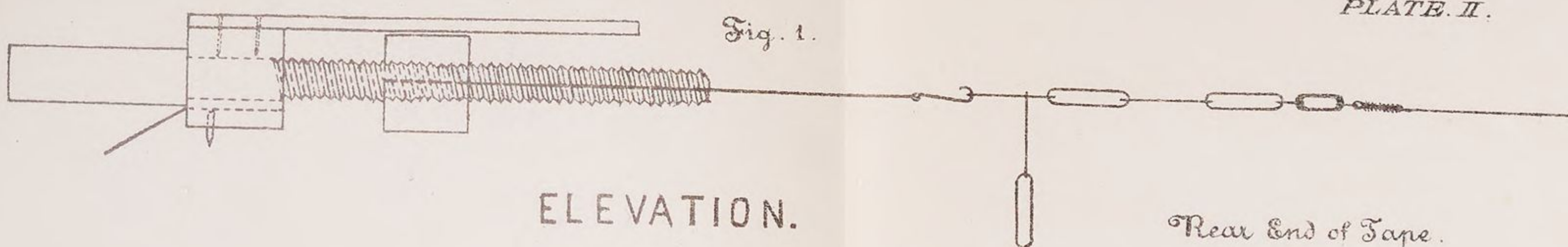


No. 302.









ADJUSTER (SECONDARY BASE APPARATUS.)

St. Louis, Mo. June 30, 1885.
 Forwarded with annual report of Middle.
Wm. A. Bingham
 1st Lieut. of Engineers.
 Secretary Missouri River Commission.

causes a nut, C, to slide in a groove on the head D and push against an iron fulcrum piece, E. The head D has dogs on its under side by which it is fastened to three table stakes. In a notch of the fulcrum piece swings a knife-edge fastened in the corner of the lever block F, at an angle of 45° with the sides of this corner. The knife edge extends beyond the sides of the lever block, and these extensions are the headings. The lever block is of wood, $8\frac{1}{4}$ inches square, 1 inch thick on top, and 2 inches at bottom, lightened by the removal of the corner diagonally opposite the knife-edge. The sides of the block beginning at the knife-edge give equal lever arms at right angles. A spirit-level, G, is attached to the top of the lever block parallel to the horizontal lever arm and used to make it horizontal when the tape is in position. The tape hook is just in rear of the level. A can of shot, H, is suspended by a hook from the front end of the horizontal lever arm. It, together with the hook end, is placed on a scale and shot poured in until the weight of the whole apparatus turning about the knife-edge is exactly 16 pounds. Two thermometers were used attached to long, stiff wire pins with hooks bent in them. These pins were pushed into the ground so as to bring the bulbs at the level of the tape and a few inches from it. (Photographs Nos. 303-4.) One of the thermometers belongs to the Mississippi River Commission and has been compared with the Lake Survey thermometer, Casella 21472. It has no number of its own but is marked "Tape."

The comparison was made horizontally in water, and the corrections are subtractive and as follows:

Thermometer reading.	Thermometer correction.
°	°
32.4	-0.4
43.3	-0.8
52.5	-1.1
63.2	-1.2
72.0	-1.1
82.6	-0.8
91.0	-0.8

The other, an uncomparing thermometer, belonged to Mr. D. C. Humphreys.

(3) *Stakes, &c.* (see photographs 300, 301, 302, 303, and 304).—The line is first cleared; 400 stakes (for a 300-foot tape) 3 feet long and 2 inches by 2 inches are distributed over it. Marking stakes are set in line by transit at every tape length, spaced by the tape under a tension by spring balance of 16 pounds, and driven until their tops are about 20 inches above ground; zinc strips, $1\frac{1}{2}$ inches wide, are then tacked to the tops of the marking stakes parallel to the base line. Three table stakes are then planted 3 feet in advance, and one straining stake 3 feet in rear of each pair of marking stakes. They are adjusted by a test frame so that the tops of table stakes shall be $11\frac{1}{4}$ inches below and of straining stakes 2 inches below the line of the tops of marking stakes. This will bring the tape when in position barely in contact with the zinc strips. Supporting stakes are then planted on the line, 30 feet apart, with their tops 3 inches above tops of marking stakes. Nails are then driven in the supporting stakes 1 inch below their tops; their heads are inclined slightly below the horizontal and must be in line vertically and horizontally. Against the heads of these nails hang double-ended hooks, of No. 12 wire, 2 inches long, bent in planes at right angles ($\perp$). The tape rests in the lower hook and is thus on a line with the tops of the marking stakes.

TACTICS OF BASE MEASUREMENTS.

For a 300-foot tape a party of sixteen is required, distributed as follows: Observer and assistant at rear end; observer, assistant, and attendant at front end; nine helpers, one at each supporting stake; two of these helpers must be able to read thermometers, closely and reliably; one recorder; one chief of party, as superintendent.

The rear observer, as soon as he sees the weight applied, adjusts his end approximately and calls out, "Ready"; the front observer replies, "Ready"; the rear observer calls out, "Mark"; the front observer replies, "Marked."

The thermometer readings are then called out and recorded; time and weather are noted, and all stand ready to march except the front observer; he makes and numbers a line on the zinc, with an engraver's pencil and rule, at right angles to the base, from a point already made by the pencil. This done, he takes the front end of the tape and gives the word, "March." All move rapidly forward, carrying the tape. Each helper carries the tape in its hook ready to suspend from the nail head, in the proper supporting stake. The superintendent watches against twist. Second and third measurements are so numbered on the zines. Differences are read to the nearest hundredth of an inch before the zines are taken up.

In daylight a tape length can be measured every two minutes. Candle-light requires 30 per cent. more time. On two occasions during 1885, 32 tapes, or 1.85 miles, were measured in one hour and nine minutes.

AZIMUTHS.

Observations were made by the method given in Professional Papers, No. 24, pages 29-30. Alternate pointings to same stars were to the reflection in an artificial horizon to eliminate level correction. Reductions were made by method given on page 640 of same authority.

TRIANGULATIONS.

The instruments used were Troughton & Simms's non-repeating 10" theodolites, Nos. 1 and 2. They were obtained from the Mississippi River Commission; they are graduated to five minutes and read by two micrometers to one second. They are peculiar in allowing the circle to be clamped to the axis and to revolve on it when unclamped. (Photograph No. 254.) The micrometers are adjustable by the graduation on the limb. Inequality of pivots is eliminated by method of observation. The value of one division of the striding level was, for No. 1, 2".00 (see Appendix A 3g), for No. 2, 1".24 (see Appendix A 3g). The instruments were mounted on large portable tripods, designed by Mr. D. C. Humphreys, which had also a centering trivet plate. (Photograph Nos. 254 and 256.)

The method followed in reading angles was that given in Professional Papers, Corps of Engineers, U. S. A., No. 24, page 31. The horizon was not closed. Limit of closure of triangles, 6". Eight combined results are taken as giving a weight unity.

The general method followed in reduction is that given in Col. A. F. Clarke's (R. E.) "Geodesy," page 263, for a simple quadrilateral. In two cases of getting off bases the method as given in Professional Papers, No. 24, page 306, will be used.

The targets used were the wire ones described in Report Mississippi River Commission for 1882, page 45. (See photograph No. 256.) They had a perforated board at bottom, which fitted on the Δ projection of the bench-mark cap. When an instrument occupied the station a smaller similar target was lined in at the rear. (Photograph No. 255.)

These targets give no phase and are equally illuminated whether the sun be in front or rear.

PERMANENT LEVEL BENCH-MARKS.

Seventy-six lines across the river valley were established, containing 152 bench-marks. These were connected by lines of levels and tertiary triangulation with the secondary triangulation stations. The lines are, for the present, numbered consecutively from Fort Benton down, the bench-marks being designated from the right bank by a numeral placed under the number of the line, thus, $\frac{1}{5}$ is the notation for the first or right-bank bench-mark on the fifth line.

The permanent marks used are the same as for triangulation stations, except that the pipe is 4' long. (Described in Annual Report Missouri River Commission for 1884-'85, Appendix A 2.)

LEVELING.

Buff and Berger's 18" Y-levels were used, with New York rods. The targets had a clamp and tangent motion, designed in the office mainly by Mr. D. W. Wellman. Wooden pegs were used, with round-headed tacks or lath nails, as the support of the rod. Levels for plumbing were attached to the rods.

The instruments were kept under tents except when being transported. Adjustments were made regularly every day, and oftener if necessity were suspected.

Fore and back sights were equalized by pacing or stadia measurements, all the instruments having fixed stadia wires and the rods an extra graduation to correspond. Sights were limited to 300 feet, except in crossing a river or when otherwise impossible. Bubble was kept in the middle.

Three readings of rod were taken at each sight and the mean adopted. These three were required to agree within 0'.001. When one level was checking another repetition was required:

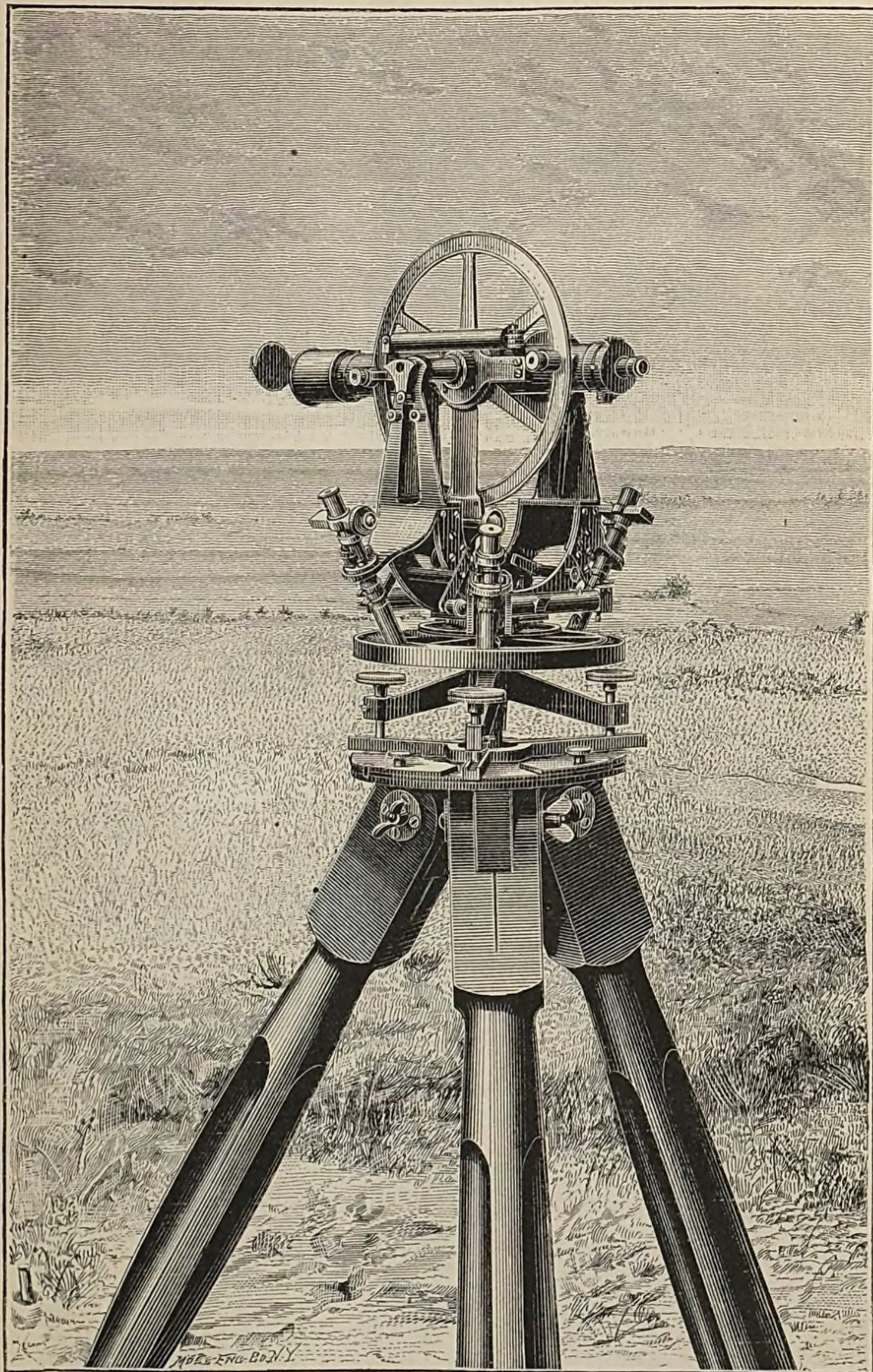
- (1) For discrepancies, on single sights, of 0'.006 or more;
- (2) For discrepancies, on single sights, of more than 0'.001 per 100' when pegs were more than 300' apart.

In crossing the river the parties followed General Comstock's "Instructions for Survey of the Mississippi River," dated Detroit, October 3, 1878. (Details in Appendix A 3a.)

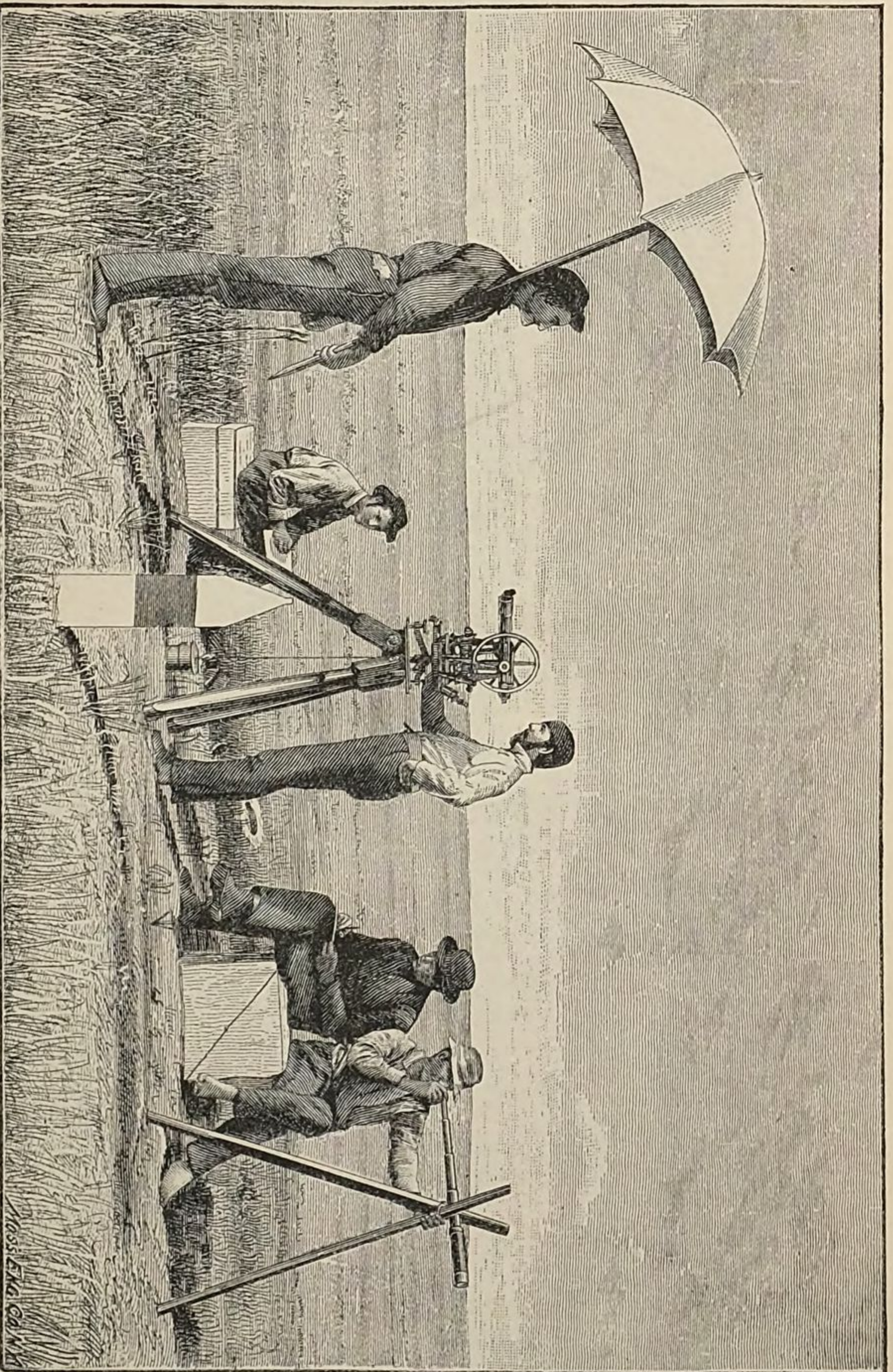
Rodmen kept notes of readings on their rods, which readings were called out as a check when the leveler and rodmen alternately passed each other.

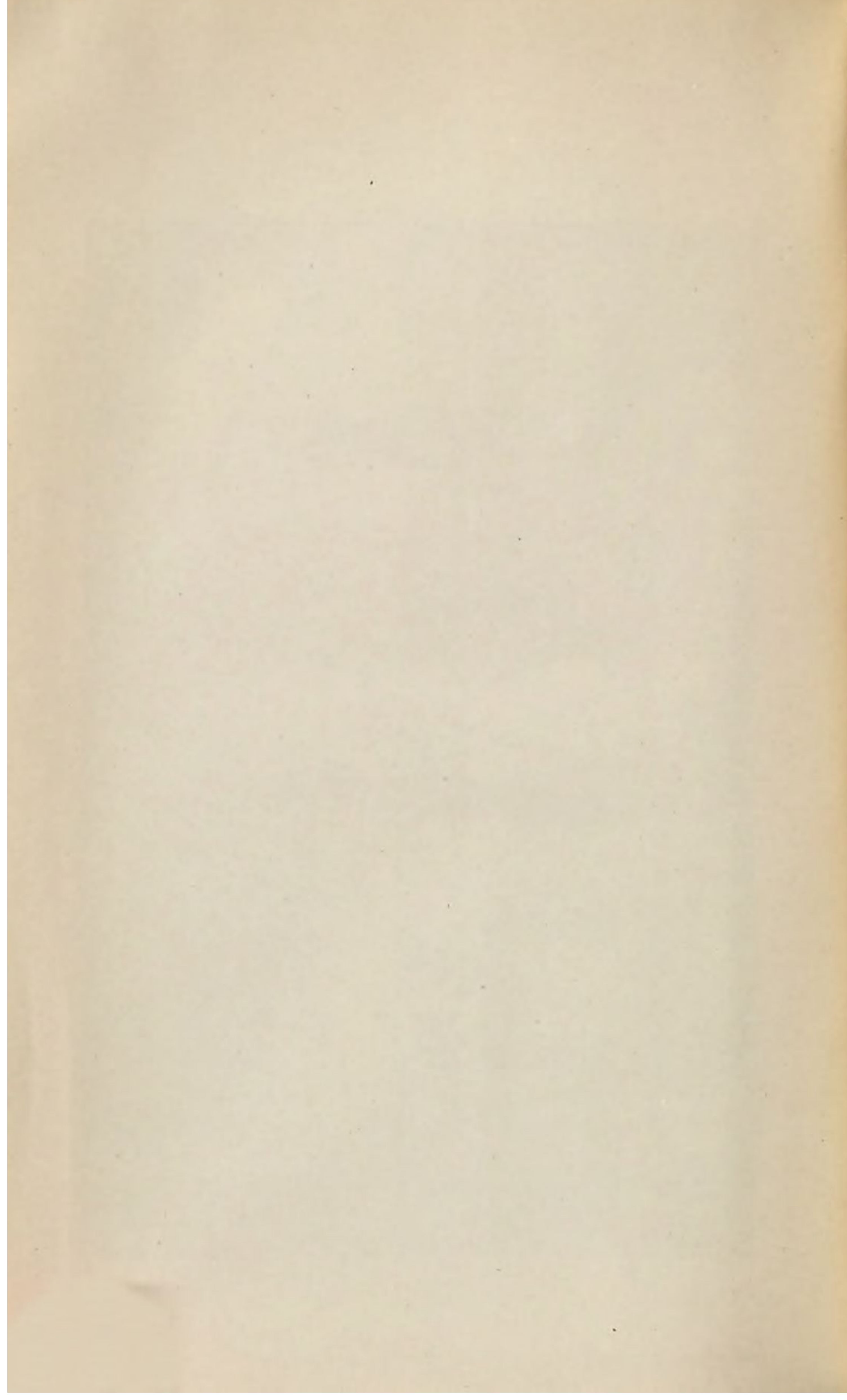
Tables given in Appendices A 3h and A 3i show the difference of elevations of bench-marks and of water-surface, the latter corrected approximately by gauge readings taken during the season at Fort Benton.

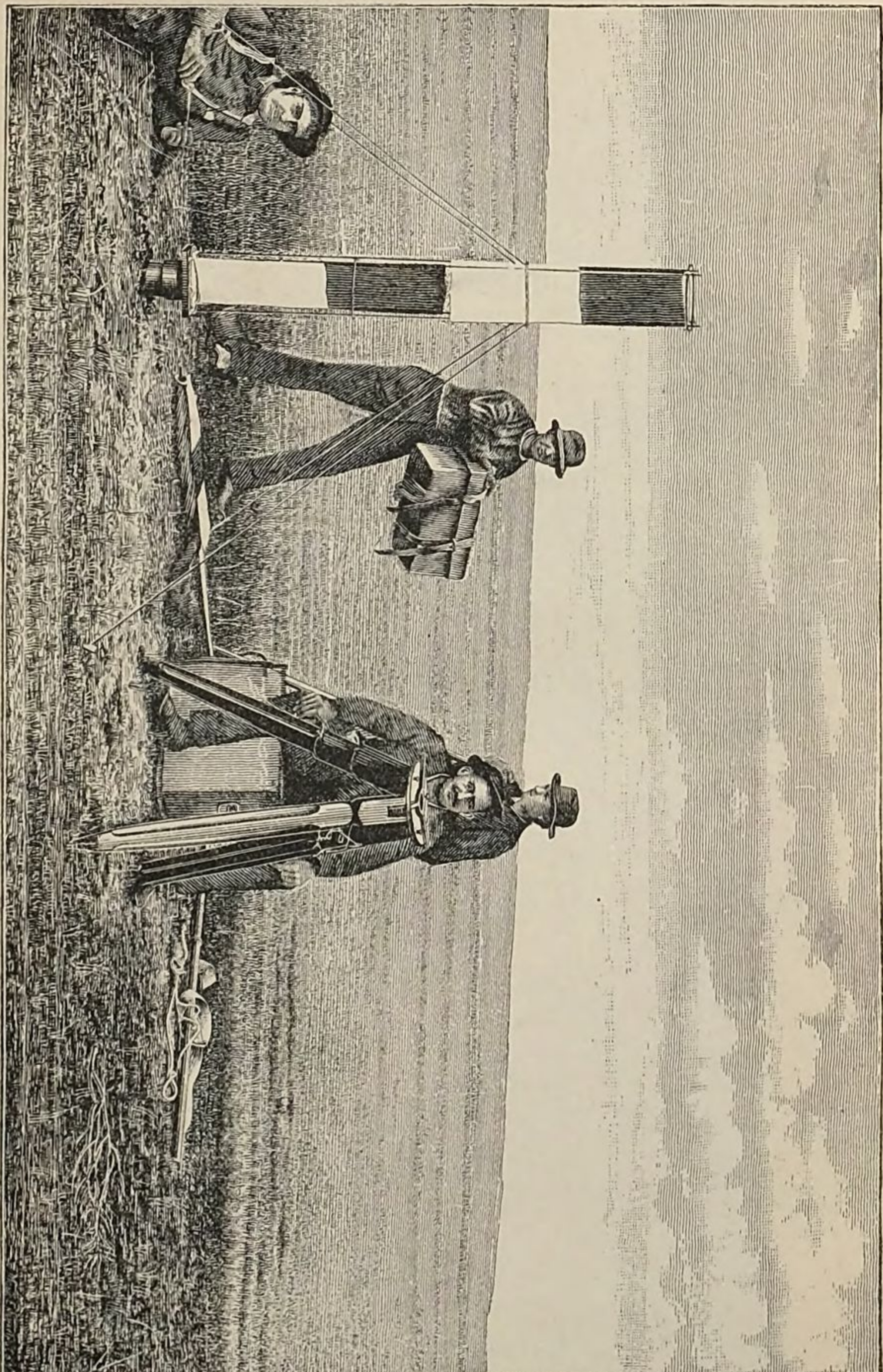
No. 254.

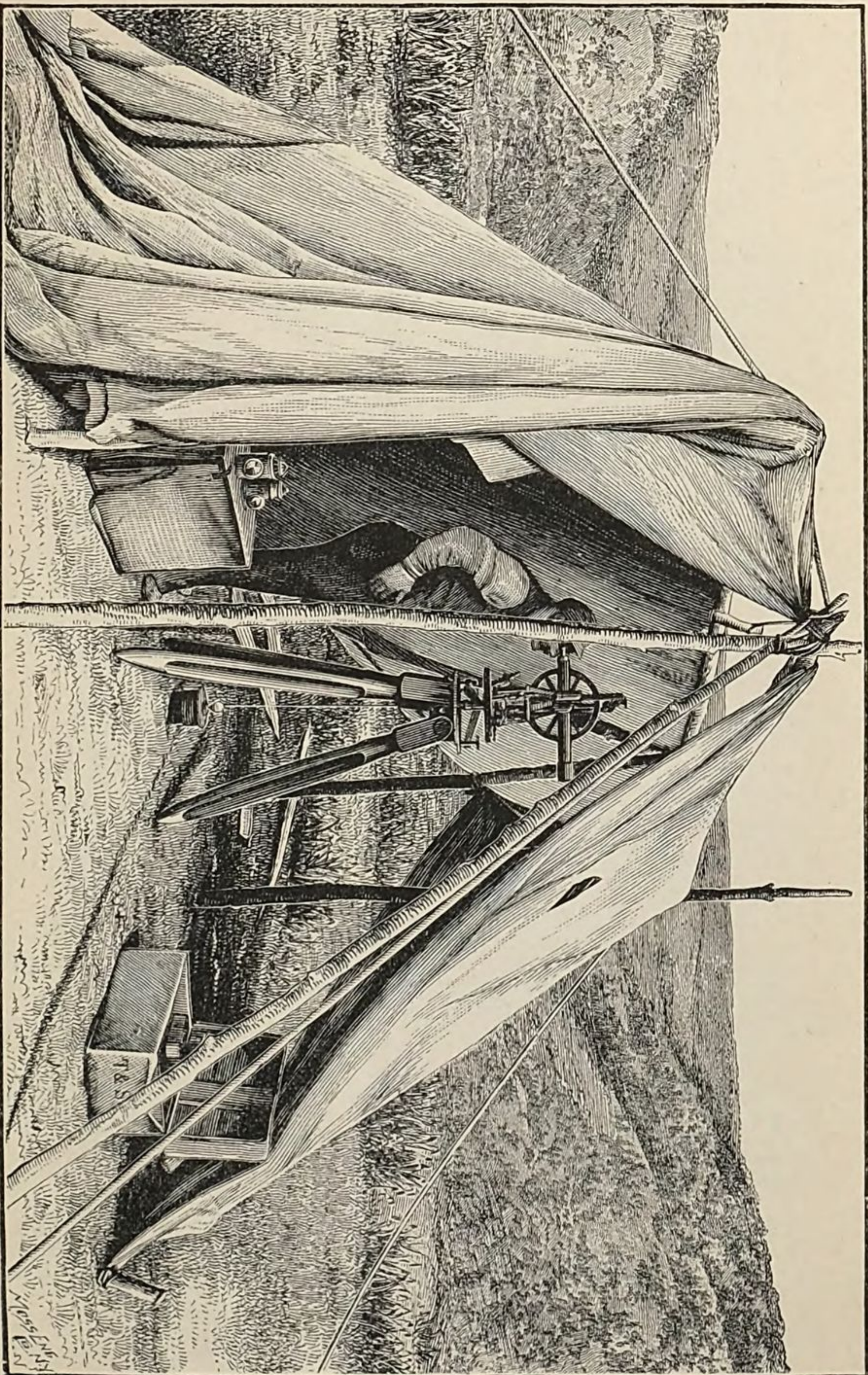


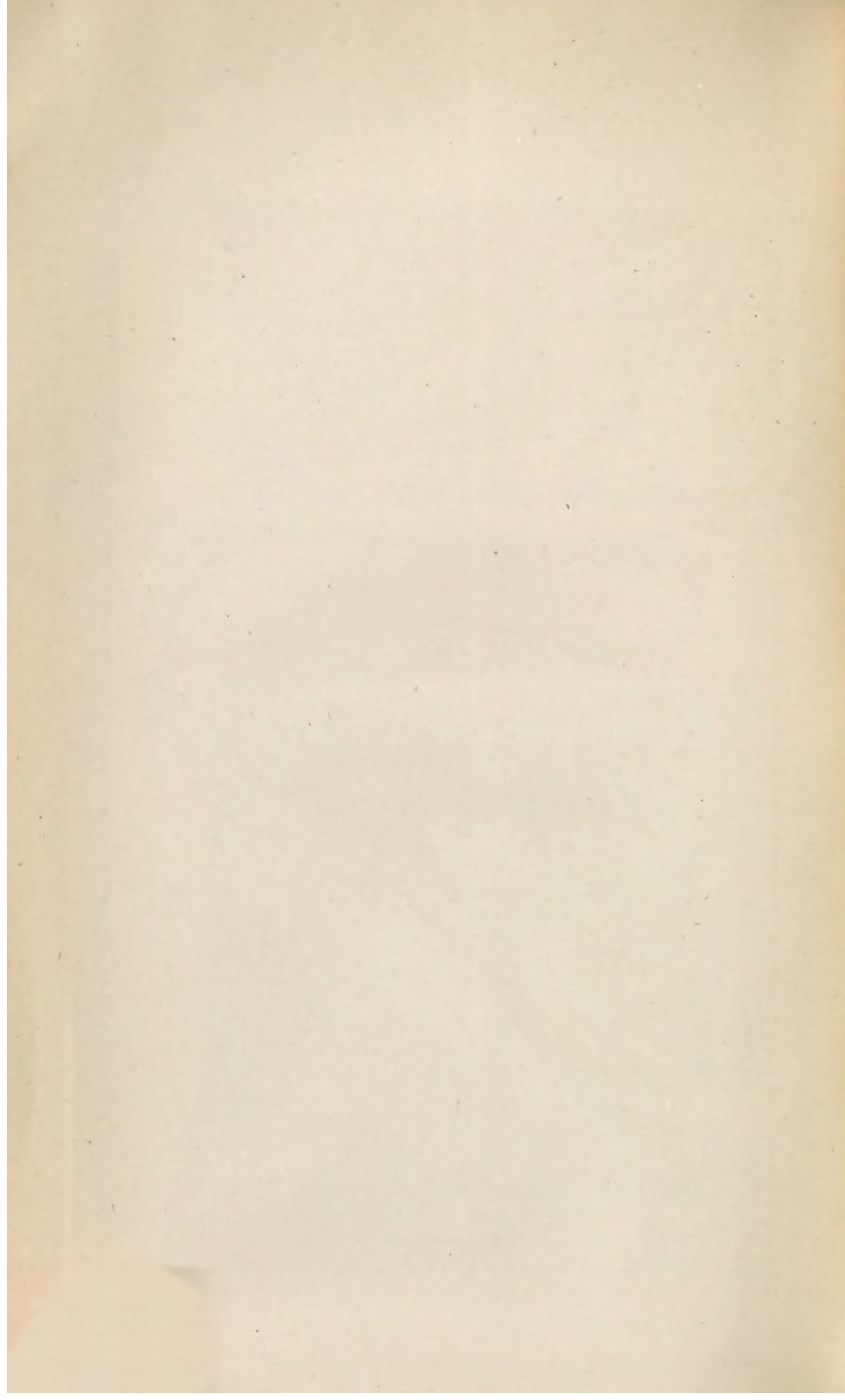
H. Ex. 28—2-49











Allotment: Surveys between Fort Benton, Montana, and Sioux City, Iowa.

[Itemized expenditures for working season—April 13, 1885, to October 31, 1885.]

On what account.	April.	May.	June.	July.	August.	September.	October.	Paid since in November.	Total.
Repairs to steamer Missouri	\$1,241 22	\$135 37	\$18 00	.....	.....	.....	.....	.....	\$1,394 59
Lumber, nails, &c	361 47	1,140 76	108 91	.....	.....	\$133 97	.....	.....	1,745 11
Machinery	24 50	.....	.....	.....	.....	.....	.....	.....	24 50
Pump	86 65	.....	.....	.....	.....	.....	.....	.....	86 65
Heater	74 50	.....	.....	.....	.....	.....	.....	.....	74 50
Transportation	2 00	.....	.....	.....	.....	.....	.....	.....	2 00
Traveling expenses .....	.....	.....	.....	.....	.....	120 60	\$165 60	\$35 30	321 50
Transportation .....	.....	.....	.....	.....	\$125 70	.....	105 10	8 50	239 30
Pay-roll .....	.....	1,163 66	1,238 33	\$2,729 01	2,484 33	3,435 33	3,256 00	314 67	14,621 33
Medicine	9 00	21 25	.....	.....	.....	.....	.....	.....	30 25
Subsistence	83 00	2,465 65	146 80	193 85	340 48	400 69	261 23	.....	3,891 70
Fuel .....	.....	242 89	477 89	509 00	242 00	261 00	151 50	.....	1,884 28
Bench-marks .....	.....	.....	312 50	.....	.....	.....	.....	.....	312 50
Wire rings, &c .....	.....	.....	221 05	.....	.....	19 65	.....	.....	240 70
Cotton cloth .....	.....	94 24	4 00	.....	.....	.....	.....	.....	98 24
Stationery .....	.....	.....	.....	.....	8 65	15 00	.....	1 70	25 35
Repairs of instruments .....	.....	.....	7 50	.....	.....	.....	.....	.....	7 50
Total	1,882 34	5,263 82	2,534 98	3,431 86	3,201 16	4,386 24	3,939 43	360 17	25,000 00

APPENDIX A 3a.

REPORT OF MR. D. W. WELLMAN, ASSISTANT ENGINEER.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., December 1, 1885.

SIR: I have the honor to submit, herewith report of operations in the field on the portion under my charge, of the survey of the Missouri River subsequent to the 30th day of June, 1885.

In my report for the year ending June 30, 1885, submitted July 6 last, a brief history was given of the survey of the Missouri River from its commencement to date, with a statement of the work accomplished and description of some of the methods used; also, a report of the progress, up to that date, of the party then organized for the continuation of the survey, commencing at Fort Benton, Montana. The party had then reached the Dauphine Rapid, 95 miles below Fort Benton, at which place it arrived July 4.

The construction of a quarter-boat 15 by 50 feet for the use of the triangulation party, the material for which was brought from Saint Louis on the steamer, was immediately commenced. This work was done principally by the party under my charge, the triangulation party being at once engaged in the preparation and measurement of a base line. The quarter-boat was finished and occupied by the triangulation party on the 18th of the month. On Monday, the 20th, the steamer left Fort Benton and the regular work was begun.

Previous to this, two bench-mark lines had been established and a start made with the levels. The work in hand was erecting Δ (triangulation stations) after their location by the assistant in charge of triangulation work, establishing permanent bench-marks and connecting them with the Δ , and carrying a line of levels on to one or more of the "benches" in each bench-mark line. On account of the small amount of money available for field operations the Commission had directed that no topographical work be attempted.

Immediately after commencing work the organization was found to be somewhat faulty, one branch of the work interfering more or less with the progress of another. By making some changes and adapting the movement of parties to circumstances however, fair but not altogether satisfactory progress was made.

Up to July 31 the work had been carried over 52 miles of river (distance estimated). During the month of August 113 miles was made, and in September, up to the 17th of the month, 73 miles.

On September 17 the work of locating Δ was suspended, Assistant Wheeler going back to hasten forward the work of the observers. My party, therefore, being una-

ble to make further progress, was employed in preparing a base-line for measurement and a place for hauling out the observers' quarter-boat. This done, the levelers were set to work checking levels previously run, the parties working up-stream, the steamer at the same time moving up to keep pace with them.

Thirty miles of levels were thus checked when, the observers having passed down two days previous, the steamer returned to the base-line. The observers were delayed here two days, a smoky atmosphere and cloudy nights preventing for that length of time some necessary final observations. By the evening of September 30, however, the observations were completed, the quarter-boat having been hauled out in the mean time and made safe for the winter; and on the morning of October 1, the steamer, with all parties on board, started for Bismarck, which place, after considerable delay from low water and windy weather, during which it was impossible to run, was reached on the 15th of the month. The party was here discharged, and arrangements made for hauling out the steamer and placing her in safe winter quarters as soon as the ways then in process of erection at that place were completed. A watchman was left on the steamer and one on the quarter-boat.

The number of Δ built during the season (July 20 to October 1).....	96
Number of permanent bench-marks established	152
Estimated number of miles of river covered.....	238
Number of miles of levels run, including running to water-surface from "benches" (of which distance 72 miles were checked).....	241

The total fall of river from Fort Benton to end of season's work, as shown by the levels, is 426 feet.

From a reference to the readings on a Fort Benton gauge, which was observed up to September 5, the river appears to have fallen, between the time of the commencement and ending of the field work, about 2 feet, which would leave a clear fall in the water surface of the river of 424 feet, an average of nearly 1.8 feet per mile. From Fort Benton to foot of Cow Island (140 miles) average fall per mile is nearly $2\frac{1}{2}$ feet.

The organization of parties was at first as follows: Two parties building triangulation stations, each consisting of 1 foreman and 3 laborers; for connecting permanent bench-marks with triangulation stations, 1 assistant engineer, 2 rodmen, 1 laborer; levels, 2 levelers, 2 rodmen, 2 shademen, 1 axman, 1 boatman.

The permanent bench-marks were the same as those used on the work inaugurated in the fall of 1884 at Glasgow, Mo., namely, a stone 18 inches square and 4 inches

U. S.
thick, marked O with a copper bolt $\frac{1}{4}$ inch in thickness leaded into the center
B. M.,

of one side, and projecting $\frac{1}{4}$ inch above the surface. This stone was placed 3 feet in the ground, and on it, and centered over the copper bolt, was placed a piece of 4-inch gas-pipe 4 feet long, with a cast-iron cap on the top secured by a bolt and nut through the cap and pipe. The cap is marked in raised letters "Mo. River Commission B. M.," and has a rounded projection in the center $\frac{1}{4}$ inch high. The real "permanent bench-mark" is the copper bolt, which is reached by taking off the cap and letting the rod down through the pipe on to the top of bolt.

The marks were set on lines crossing the valley, estimated to be an average distance of 3 miles apart, and the valley being narrow in this portion, only 2 benches were placed in a line, the intention being to so place them that they would be safe from disturbance by caving banks or other causes.

The relative position of the bench-marks is marked approximately on the sketch made while the party was ascending the river, and such description of their location was recorded as it was practicable to make in an uninhabited and almost treeless country.

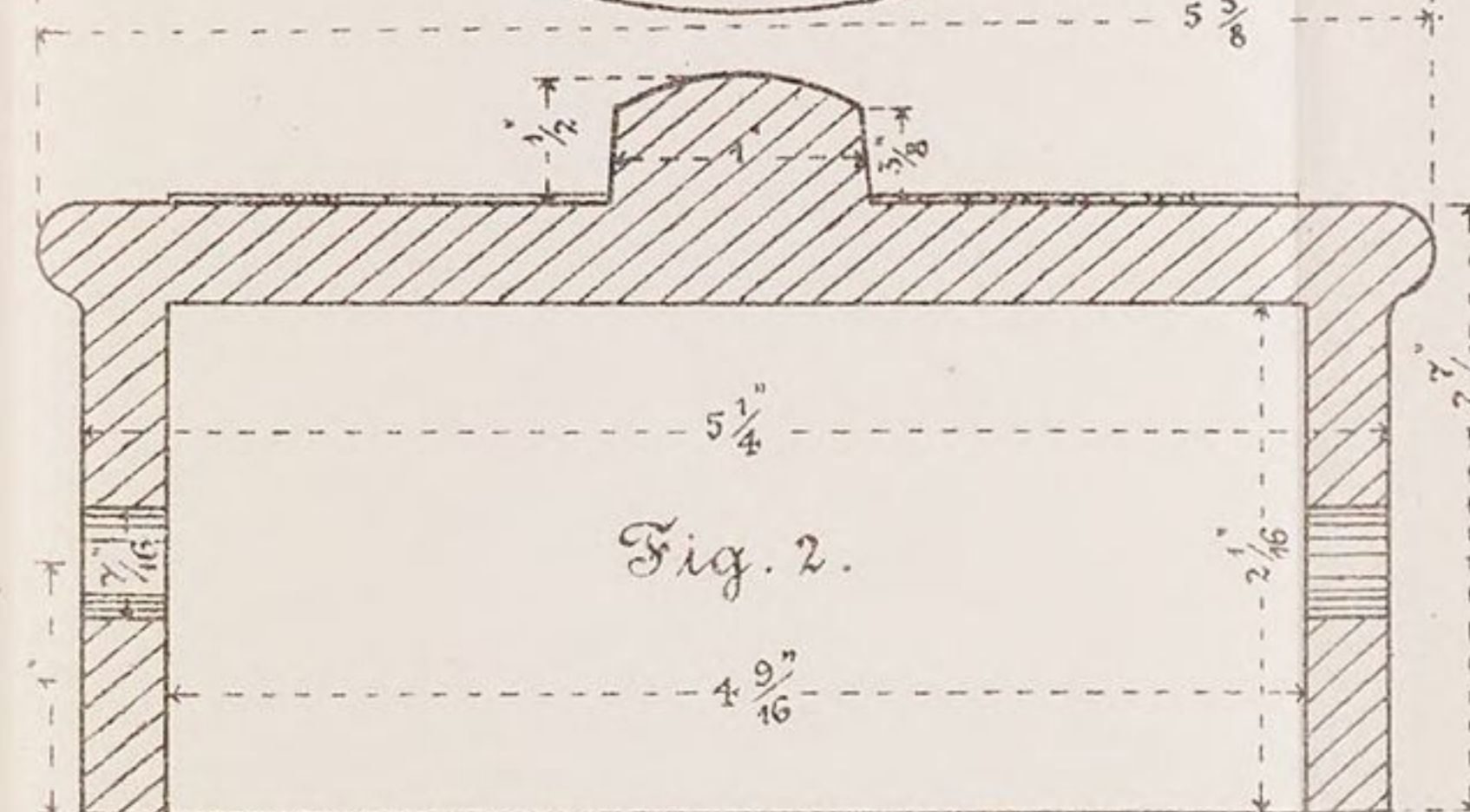
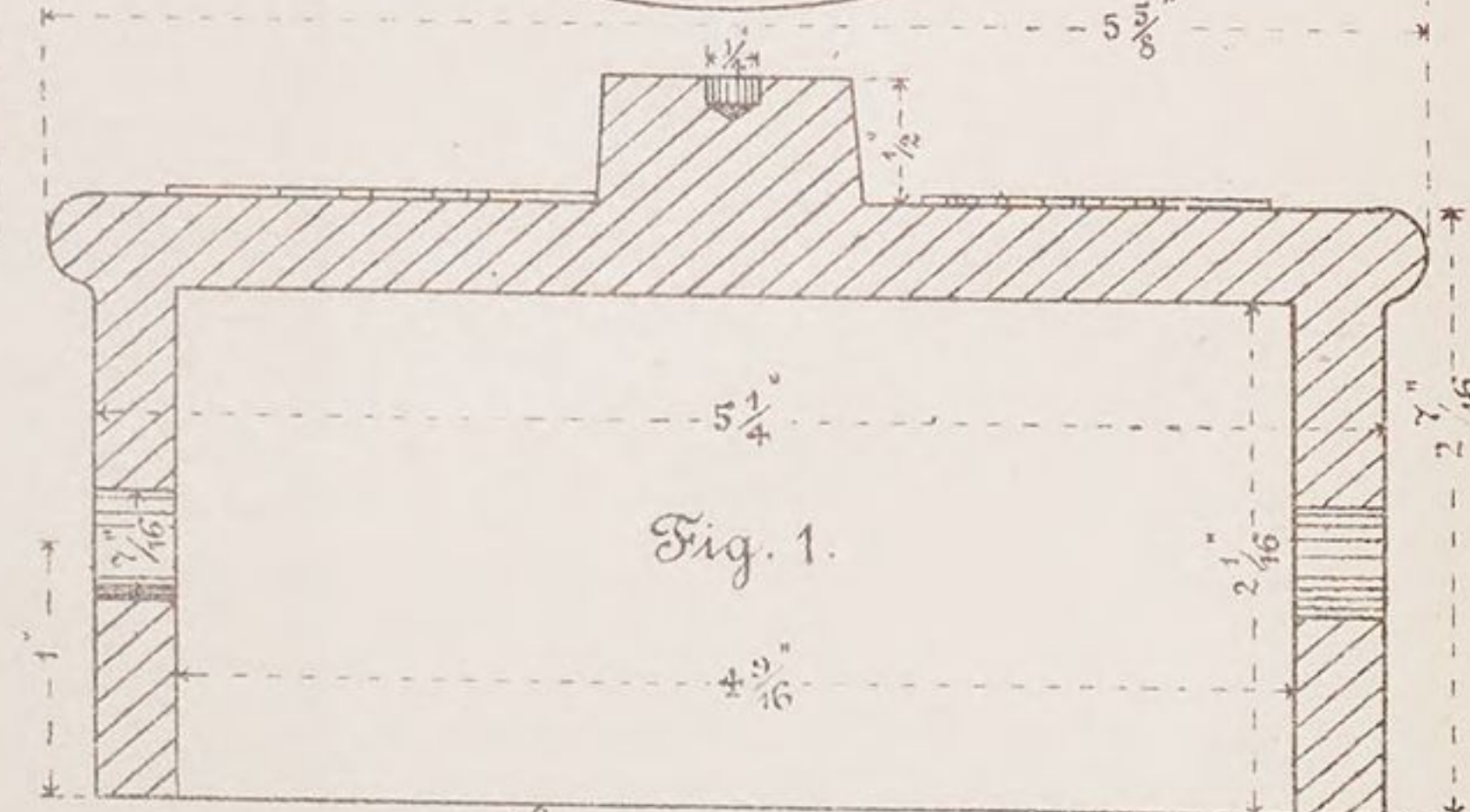
The monuments for the triangulation work were the same as for the bench-marks; except that the gas-pipes were 3 feet long and only projected a few inches above ground when set, and the cap on top had a triangular-shaped projection with a small hole, $\frac{1}{8}$ inch in diameter, drilled in the center. The stones were marked U. S. Δ , a small hole being made in the center.

The method of connecting the permanent bench-marks with the triangulation was by a series of tertiary triangles; the bench-mark lines being made a part of the system. This series was connected, as often as was found practicable, directly with the main triangulation.

The bench-mark lines, established this season, are numbered consecutively, beginning at Fort Benton, and the bench-marks are designated thus: P. B. M. $\frac{1}{5}$ is the first bench-mark in line 5 commencing at the right of the line on the right bank of the river, $\frac{2}{5}$ would be the second mark in the same line.

The levels were to be carried down by the shortest practicable route, from one bench-mark line to another, taking in at least one bench-mark in each line, and to be checked by one level following another, using as a rule the same turning pegs, and making frequent comparisons so as to avoid loss of time in hunting up errors.

Scale: 6" = 1'



Section a-b.

Section c-d.

CAPS FOR PERMANENT BENCH MARKS AND TRIANGULATION STATIONS.

H Ex 28 49 2

THE AMERICAN GRAPHIC CO., N.Y.

St. Louis, Mo. June 30, 1886.
 Forwarded with annual report of this date.
W. A. Bingham
 1st Lieut. of Engineers.
 Secretary Missouri River Commission.

Elevations of water-surface were to be taken opposite each bench-mark reached.

It was soon found, however, that the triangulation stations could not be located fast enough to keep two building parties employed; also, that the levelers, working as proposed, could not keep pace with the other work. The parties were, therefore, reorganized by making *one* building party, consisting of a foreman and four men, with a pack horse for carrying the stone, taking one laborer from the bench-mark party and adding one to the party connecting permanent bench-marks and triangulation stations, and dividing the level party into two, adding two laborers to their number, each party to run single lines of levels, leaving them to be checked at some future time, except in cases when the condition of the work happened to be such as to allow time for some portion to be checked. After this, by management, the work proceeded without any great interference, one branch with another, the progress, however, always depending on the rate at which the triangulation stations were located. The pack horse was found to be a wonderful help; the expense was less than \$10 per month, and the work accomplished by his use would have required at least two men.

It seems proper in this connection that I should state that, in the early part of March, last, I was requested by the president of the Commission to submit a plan of operations and organization for continuing the survey, commencing the season's work at Fort Benton, the work to embrace a secondary triangulation, establishing permanent bench-marks and their connections with the triangulation and levels as already mentioned.

The plan was submitted March 12, and was approved, in the main, both by the president and secretary, and I was directed to proceed to organize parties for the work in accordance with the plan as approved, and to include the laborers for the triangulation work.

This plan contemplated the carrying on of the triangulation work by an independent party, the observers and their assistants to be provided with a quarter-boat that could be readily navigated by hand and the pioneers, locating triangulation stations, to be furnished a camping outfit, while the triangulation-station building and setting of permanent bench-marks, the material for which had to be carried on the boat, was to be done from the steamer. It also contemplated that the location of triangulation stations would be kept in advance far enough to enable the movements of the steamer and operations of the different parties, for the day, to be planned with some degree of certainty and to allow advantage to be taken of any circumstances to make progress.

The assistant in charge of the triangulation, however, and who also located the triangulation stations, wishing to keep as near as possible to his observers, in order to have their work as much as possible under his eye, thought it best for him to remain with the steamer. This rendered locations for any distance in advance out of the question and necessarily bunched the work to such a degree as often to hamper the movements of the different parties. As an example, on four days in the month of August, only two half-days' work was done, by the building party, for want of locations. This, however, could not be avoided, as it was not possible always, in any one day, to definitely locate a triangulation station, and thus, with all the parties so close together, some one must wait until the question was settled.

The steamboat, which is necessary for transportation of material and supplies, cost, for salaries of crew and for fuel during the months of June, July, August, and September, one-half as much as the salaries of the entire party. It is evident, therefore, that an economical expenditure of money would require from the boat the greatest possible amount of service in a given time, and, in order to do this, its movements must be governed only by the amount of work capable of being done by the parties necessarily attached to it. It seems plain, therefore, that a separate outfit should be provided for the triangulation work that will afford facilities for keeping locations in advance of the steamboat, and also for keeping up necessary communication with the observers. A small steamboat or launch, suited to the navigation of the upper river, could be constructed that would be inexpensive and meet all requirements.

With facilities, as above indicated, for the triangulation party, the work that could be accomplished in a day, from the steamboat, would be limited only by the distance that continuous levels could be carried; and that would be governed, of course, by the force employed at that work. I feel confident that with a party, the monthly expenses of which I estimate at 28 to 30 per cent. greater than that of the past season, at least 50 if not 75 per cent. more work could be done.

The levels, as before stated, were, after the first few days, carried on by two parties, each taking a separate portion of the day's work, the up-stream party, at night, connecting with the bench-mark on which the other party started in the mornig. In this way each party could do about 3 miles of careful leveling in a day. Whenever the other work was delayed for any reason, the levels on that day were checked, both parties going over the same ground. A large portion of that work, therefore, is unchecked, but this, for the purposes of the survey, is not essential at present, as levels must be taken over the whole ground again, when the topographic and hydrographic work is done.

The leveling instruments used, so far on the work, have been 18-inch γ levels, chiefly those manufactured by Buff & Berger, of Boston, with New York rods. The methods used were those usually practiced with these instruments, but great and constant care and several original devices were used to insure accuracy.

Levels were designed, which could be readily attached to the rods for keeping them vertical, and a clamp and tangent screw fitted to the targets to facilitate slight movements.

The instruments, except when being carried from one setting to another, were kept under tents as a protection against sun and wind. The adjustments were examined once a day, or oftener if there were reason to suspect a change. Fore and back sights were equalized by pacing or by stadia measurements, all the instruments having fixed stadia wires, and the rods an extra graduation to correspond. Sights were limited to 300 feet in length except when a longer one was necessary, as in crossing the river. At least three readings of the rod were taken at each sight, which readings must agree within 0.001 feet and a mean of the three adopted. When one level was checking another and discrepancies occurred, on single sights, of 0.006 feet, or more, or discrepancies on single sights of 0.001 per 100 feet of distance between pegs, if pegs were more than 300 feet apart, a repetition of the work was required. The rodman was required to keep full notes, as a check; and in order that the reductions should be as nearly independent of each other as possible, and the time, used in calculations in the field, reduced to the minimum, the following system was required to be invariably used: The rodman, being at a bench or peg, and, having given three settings of the target that answer the requirements, reduced them to a mean and recorded the same, sets the target at the mean reading, clamping it firmly; as he then approaches the instrument, the leveler calls the elevation of the bench or peg the rodman has just left, which the rodman halts to compare with his own record, at the same time presenting his rod to be read by the leveler, who examines it and calls out the last three figures of the reading, which the rodman also verifies, by reference to his book, and then passes on to the next peg. Here, after having given the three rod readings in the same manner as before, made his record, and set his target, he calculates the last height of instrument, the data for which he has already, while the instrument is coming up, and, as the leveler approaches the peg, calls this height of instrument, which the leveler verifies by reference to his note-book and then checks the last rod reading, as before, by calling out the last three figures, and so on.

In crossing the river, when found necessary, a similar method of procedure to that required by General Comstock for "ordinary levels," in his "Instructions for the Survey of the Mississippi River," in 1878, was used. The instrument being set up on the shore, and quite close to the last turning peg, two or three careful readings are taken on the peg, then eight to twelve readings on a peg across the river, a mean of which is taken as the true reading. The instrument is then moved across the river and the process reversed, eight to twelve readings being taken on the peg across the river and then two or three on the one near the instrument. General Comstock states that, for a river 1,460 feet wide, this method has given results with a probable error of less than 0.0007 foot.

In 1880 and 1881, levels were run between Sioux City, Iowa, and the mouth of the river, in two continuous lines, one starting from Sioux City, the other from Lexington, Mo. These were checked by independent levels running into the same benches. The greatest difference found between the two lines from Sioux City to Lexington was 0.182 foot, 472 miles below Sioux City. From Lexington to the mouth the greatest difference was 0.173 foot, 200 miles below Lexington.

Levels were also carried from Fort Randall to Sioux City (179 miles) in 1881, and checked in the same manner. The difference in elevation at the end of the line was 0.060 foot. The greatest difference at any time was 0.082 foot, at 128 miles.

In 1882, 190 miles of levels were run (Pierre, Dak., to Fort Randall), where the difference was 0'.154, the greatest difference being 0.156 foot, at 175 miles.

In 1885, the greatest length of continuous checked line was 17 miles; difference, 0.021 foot.

All these differences are considerably within the limit of error allowed by the Mississippi Commission.

It will be readily seen that such a coincidence of results must necessitate the most careful manipulation of the instrument, as well as a rigid adherence to systematic methods of procedure, by both parties. If, then, the γ level is capable of precise work, the good quality of that done on this survey must be admitted.

As some question has arisen as to the confidence that can be placed in these levels, the above details are given.

The leveling this season was under the special charge of Assistant Albert Warren, to whose care, zeal, and energy I am greatly indebted.

The level work in the fall of 1884 was simply transferring elevations from benches formerly established to the permanent bench-marks.

I would state here that the rather meager results of that season's work were due

to the inadequate force employed. The work was new, and the difficulties were not known until operations commenced. It was then so near the end of the season, estimated to be less than a month, that it was not thought best to attempt any change.

For carrying on the work on the portions of the river where the bluffs are timbered an entirely different organization is required from that needed where they are bare, as is the case from Yankton to Fort Benton.

Considerable damage was done the past season to the steamboat Missouri, her light machinery rendering it impossible to handle her on the rapids and to keep her off the rocks, with which the bottom in these places is covered, and which indeed abound in the upper 300 miles of the river, while, on account of the light build of her hull, if a rock is touched a hole in her bottom is almost sure to result.

On August 17 a hole, which took two days to repair temporarily, was stove in her bottom from this cause, and several floor timbers and bottom plank were broken, and before the rapids were passed more than forty floor timbers were broken and several more plank shattered. River-men consider it a piece of remarkable good fortune that she was gotten through at all. The boats running regularly in that part of the river are strongly built, with powerful machinery, with which they can be readily handled, and while they cannot be kept off the rocks entirely, their strength prevents much damage.

It is estimated that at least \$2,000 will have to be spent in repairs on the Missouri before she will again be fit for service. The season's experience has demonstrated her unsuitableness for the work on the upper river, both on account of expenses for repairs, which are almost inevitable, and from the time lost when it is necessary to go upstream. Thirty days were consumed in June and July last in going from Bismarck to Fort Benton, an estimated distance of 816 miles, during which time the entire party were under pay, a large share of them doing nothing except to assist in getting the boat along by pulling on a tow-line. The running time was not less than sixteen hours a day. This would make an average speed of 1.7 miles per hour. The boat will answer quite well for the triangulation and bench-mark work yet to be done, as in that part of the river there is less current, and the bottom is principally sand; but for that still to come in the upper river a strongly built and powerful boat is needed. A suitable boat for this purpose would be a good tow-boat for improvement work when the survey shall be completed.

For continuing the triangulation and permanent bench-mark work on the basis of the plan herein outlined an organization something like the following would be needed: Two parties building triangulation stations; one party setting permanent bench-marks; one party connecting permanent bench-marks with triangulation stations, and three level parties.

This would require a force of 56 to 58 men all told, the monthly salaries amounting to about \$3,000. Total monthly expense, including subsistence and fuel, \$4,000 to \$4,500.

Very respectfully, your obedient servant,

D. W. WELLMAN,
Assistant Engineer.

Lieut. THEO. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission, Saint Louis, Mo.

APPENDIX A 3b.

FIELD WORK IN MONTANA.

On June 4 the observers and myself arrived at Bismarck, and on the 5th 3 rodmen and 7 laborers reported for field work in Montana.

The party arrived at Benton, on board the United States steamer Missouri, on the evening of July 4. While the quarter-boat, brought from Saint Louis in parts, was being put together a base-line was selected and measured three times over, and its azimuth determined by three nights' observation on Polaris near elongation. Five stations were located on the main triangulation, and the base-line stations were connected by tertiary triangulation with the flag-staff of Fort Benton, the latitude and longitude of which is reported in Major Twining's "Report on the Northern Boundary Survey," 1878, pages 193 and 399, as latitude $47^{\circ} 48' 50''$, longitude $110^{\circ} 39' 48''$. Connections were also made with land surveys and other points.

The quarter-boat was turned over to the party on July 20, and the parties, as then organized, were a reconnoitering party consisting of myself, a rodman, and a boatman, to work mainly from the steamer Missouri; two observing parties, one for each

bank, to work from the quarter-boat, each party consisting of an assistant engineer, rodman, and three laborers; while a mate, two boatmen, and a cook remained on the quarter-boat, or took the place of laborers in the observing parties when required. The instruments were the same as used in the lower work, but large tripods were substituted for stations and large umbrellas for observing tents. The tripods were made in Saint Louis, from designs principally by Mr. Humphreys. (See photographs 254 and 256.) The trivet-plate was made movable, for the purpose of centering over the station mark, and the tripods were a complete success, both for convenience and stability. The targets were concentrically secured to the cap of the iron pipe which marks the place of the station, and were placed by the station-building party. When a station was being occupied the target was set aside and a smaller one sighted in for the use of the other observing party. The larger target-frame was 6 feet in height by 9 inches in diameter, and the smaller one was rectangular, 30 inches in height by 7 inches in width.

The first stations off the Benton base were occupied on July 21, and the last to close on Trover's Point base on September 30, on which date the field work was closed. The Trover's Point base was measured three times over; its azimuth determined by three nights' observations on stars near elongation, and its approximate latitude determined.

There were sixty-two working days, of which two were too rainy, seven too smoky, and one too windy for angle reading; leaving fifty-two days on which it was possible to occupy stations.

There were ninety-four stations occupied (besides four located outside the system), and thirty-five cases in which stations were reoccupied, caused by the mistaking of or by the invisibility of a target or by a shower of rain before the day's work was completed. In a few cases stations were reoccupied because the triangle did not close within limits, and this took much time, when it was necessary to row up-stream from 3 to 5 miles. The number of triangles measured was 200, giving 52 quadrilaterals. The axillary length of the net was 177 miles. On several occasions a party was able to complete two stations a day, but this cannot well be done on many consecutive days, for if the parties leave the quarter-boat at dawn they cannot well be at the boat again before 10 or 11 a. m., having from a half mile to 2 miles to carry boxes, read angles, make sketches, &c. It requires an hour to reduce and compare results on the upper triangles before it is safe to drop the quarter-boat down-stream. It then takes two hours to drop down-stream by quarter-boat, or about one hour to row down by skiff to reach the landing for the next station. It is 3 p. m. by the time the station is reached, and dusk by the time the parties are again at the quarter boat; then results must be compared, and there is no time left for dropping down, so as to leave for a station at dawn the next morning.

It is noticed that a. m. observations are more discordant than those of p. m., and that, in general, it is next to impossible to make satisfactory observations in the middle of a sunshiny day. The most satisfactory work is done after 3 p. m., and it is probable that there is nothing gained by an observer trying to occupy more than one station a day when the quadrilaterals are from 3 to 5 miles in length and the bluffs so high and rugged as those of the Upper Missouri.

The country in general may be described as a treeless, grassy, alkaline plain, through which run numerous dikes and an occasional mountain ridge. The Missouri River and its tributaries have eroded the surface and left innumerable cañons, with abrupt rocky bluffs, from 200 to 1,100 feet in height. The rock is mostly of a soft sandstone, cut with iron-stone dikes, and a clayey shale of great depth underlies the sandstone. Veins of impure soft coal and red scoria are frequently present. Cottonwood and willows grow on the narrow bottom land, and between Judith and Old Fort Peck, much pine, spruce, and red cedar are found in the cañons and on the hill sides. In the disintegrated shale bluffs there are many land slides, which when wet with spring rains are almost impassable. There was much rain this season up to the middle of July, but during August and September there was very little, and the season was favorable for our work. October would also have been a favorable month for work.

The party arrived at Bismarck by steamer on October 15, and were discharged. On the way to Bismarck an accurate plot was made of the net of triangles checked by the closing of the Benton base on the Trover's Point base, both in length of line and in the proper change of azimuth.

On return to this office it was decided, in order to find the length of the base line tape, to remeasure, under as nearly as possible the same tension and conditions as actually existed in the field, a portion of the Olney base, primary 1879. (See Professional Papers, Corps of Engineers, No. 24.) The portion selected was the east half, or a distance of 2.05 miles, which was twice measured in an overcast day.

The Glasgow base, located a year ago, was then measured twice over, and its azimuth determined by two nights' observations on stars near elongation, which closed the field work on November 11.

THE BASE-LINE MEASUREMENTS.

The experience of observers, under the Mississippi River Commission, on base-line measurements with a steel-tape had not been entirely satisfactory; but it was believed that the main source of error was due to an uncertain temperature correction. Accordingly I determined to do this work by night or on an overcast day and in the quickest time possible, that single measurements might be comparable, the change of temperature being slight during a measurement.

The apparatus prepared was (see Plate II) slow-motion screws, for controlling ends of tape; tension apparatus, to give a known strain on tape; wire hooks, to support tape and eliminate friction, and zinc strips, for the marking stakes, for permanent record. The screws were of wood, three-fourths of an inch in diameter, and prepared from common carpenter's wood clamps. The socket block of that used at the rear end of tape was supported on a straining-stake, being held to the stake by two sharp spikes in the block and by a wire about 3 feet long, attached to the block and to an iron pin, which pin was pressed in the ground to the rear of the straining-stake. The nut was attached to the tape through wire links, by means of which a first rough adjustment was made. The socket block of the screw, at the front end of the tape, was fastened to a table, and the nut carried a slide in grooves, which slide carried an iron fulcrum piece for a knife-edge. The table was a plank, 2 inches by $8\frac{3}{4}$ inches by 18 inches, supported on three stakes, and held to the stakes by sharp spikes in its bottom. The lever arm-piece was of wood, $8\frac{3}{4}$ by $8\frac{3}{4}$ inches, an inch thick at top, 2 inches at bottom, and lightened by having the front upper corner cut away. The knife blade was set in the lower rear corner, at an angle of 45° with the side; it was longer than the thickness of the block, and the projections gave the bearings on the iron fulcrum. The sides of the block from the knife-edge corner gave the lever-arms, each exactly equal in length and at right angles to each other. A spirit level was attached to the upper edge of the block and made parallel with horizontal lever arm. A weight, consisting of a can of shot, was made exact by placing it, together with hook end of the horizontal arm, on the scales, while the knife-edge end of the arm rested in the fulcrum, and was to give a known tension of 16 pounds to the tape. An engraver's pencil and a right-angled rule, of the same width as the zinc strip, was used in marking on the zinc strips. The thermometers were attached to stiff wire stakes for easy and safe transportation, and were so set that the bulb was at about the elevation of the tape above the ground. The wire hooks, for supporting the tape, were 2 inches in length (No. 12 wire), and so made that the planes of the hooks at the ends were at right angles to each other.

The base line was cleared of brush and weeds and about 400 stakes, each 3 feet in length, with a cross-section of about 4 square inches, cut from young cotton-wood trees, or sawed and split from larger trees, were distributed over the line. The marking stakes were set in line, with a field transit at every tape length and spaced with the tape under a stretch by spring balance of 16 pounds, and were driven to about 20 inches above ground, when a zinc strip, made parallel with the stretched tape, was tacked on the top. The three table stakes, about 3 feet in advance, and the straining stake, about 3 feet in the rear of the marking stake, were adjusted in position and height by a test frame, the table stakes being $11\frac{3}{4}$ inches below and the straining stakes 2 inches below the marking stake, so that the tape when stretched was barely in contact with the zinc strips. The supporting stakes at every 30-foot graduation of the tape were also distributed by the party of four setting the marking stakes. Another party of two attended to setting in the supporting stakes and putting in line for each tape length the nails driven, nearly horizontally in the supporting stakes, at a height of 2 inches above the line of the tops of the marking stakes. The heads of the nails were brought in line, vertically and otherwise, by eye, the heads of the nails being a trifle lower than the points, so that the bearing of the hooks should be against the nail head. A party of two ran a line of check levels over the marking stakes.

To make a quick measurement requires a party of sixteen persons, distributed as follows: An observer and assistant at rear end of tape; an observer, assistant, and attendant at front end; nine persons at the supporting stakes, two of whom can read thermometers reliably; a recorder and the chief of party as superintendent.

When ready for measurement the observers exchange word signals, as follows: The rear observer, as soon as he notices that the weight has been applied, adjusts approximately and calls out "ready." The front observer replies "ready." The rear observer shouts "mark," and the front observer shouts "marked." Then the thermometer readings are called out and recorded, the time and weather conditions noted, and all make ready to march except the front observer, who makes and numbers a line, with an engraver's pencil and rule, on the zinc at right angles to the base line from an indentation already made by the pencil. When the front observer is ready he takes the end of the tape and orders "march." All move rapidly forward, each man from a supporting stake, carrying the hook, with the tape in place ready to replace it on its proper stake. The superintendent takes care that there is no twist in the tape, &c.

When there is day-light for the work it is possible to measure a tape length every two minutes; by lamp-light about one-third more time is required. On two occasions this season 32 tapes, or 1.85 miles, were measured in one hour and nine minutes. Second and third measurements are so numbered on the zinc strips. The zinc strips are of such length as to give some room for expansion in the tape, but it is sometimes necessary to make a set-back or a set-ahead at the rear zinc. The difference of measurement, as shown on the zinc strips, is read to the nearest one-hundredth of an inch before the strips are taken from the stakes. The strips are then numbered and kept as a part of the record of measurement.

There has been a remarkably close agreement in two or three measurements of the same line, in three of the four base lines this agreement being less than 1 in 400,000 when reduced to 62° Fahr.

THE READING OF ANGLES AND REDUCTION OF TRIANGULATION.

The theodolites used were the 19-inch limb non-repeaters, Troughton and Simms's, Nos. 1 and 2, made expressly for the Mississippi River Commission, in which the circle is clamped to the axis and is revolvable on it when unclamped.

The method of reading angles was that given in Professional Papers, Corps of Engineers, United States Army, No. 24, page 31, under (c), and eight combined results were obtained as giving a weight-unity to an angle. The closing of the horizon was avoided, however (in order to simplify the reduction), by stopping on the last station and not "closing on the first."

The method of reduction will be that given for a single quadrilateral, by Col. A. F. Clark, "Geodesy," pages 263-6, except in two cases in getting off bases, when the method given by General Comstock (Professional Papers, No. 24, pages 306-312) will be followed.

AZIMUTH.

The observations were made in accordance with the method given in Professional Papers, No. 24, pages 29, 30.

The alternate pointings on some stars were lowered to the image from an artificial horizon, so as to eliminate the level correction. The reduction will be by formulæ given on page 640 of Professional Papers, No. 24.

Respectfully submitted.

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APPENDIX A 3c.

LENGTH OF BASE LINE.

The lengths of the base lines, measured during the season of 1885, are expressed by the following equations:

BENTON BASE.

- (1) $33 \times 299'.079 \pm 0.000' + 0'.975 - 1'.809 \pm 0'.000 - 0'.180 + 1'.711 = 9870'.304.$
- (2) $33 \times 299'.079 \pm 0'.000 + 0'.795 \pm 0'.000 \pm 0'.000 - 0'.180 + 0'.221 = 9870'.443.$
- (3) $33 \times 299'.079 \pm 0'.000 + 0'.928 \pm 0'.250 \pm 0'.000 - 0'.180 - 0'.217 = 9870'.388.$

TROVER'S POINT BASE.

- (1) $32 \times 299'.079 + 140'.033 + 1'.662 \pm 0'.000 \pm 0'.000 - 0'.240 - 0'.067 = 9711'.916.$
- (2) $32 \times 299'.079 + 140'.033 + 1'.662 \pm 0'.000 - 0'.120 - 0'.240 + 0'.052 = 9711'.915.$
- (3) $32 \times 299'.079 + 140'.033 + 1'.662 \pm 0'.000 + 0'.628 - 0'.240 - 0'.719 = 9711'.892.$

In which equations the terms are:

First term. Number of entire tapes multiplied by length of tape at 62° Fahr.

Second term. A distance measured with a fractional part of the tape under 16 pounds tension and reduced to 62° Fahr. between the last and the next to the last marking stakes of the base line.

Third term. A distance measured with a boxwood scale between this last stake and the end of the base line.

Fourth term. Total distance set back or ahead on a measurement as recorded on the zinc strips. (See tables appended.)

Fifth term. Reduction of one measurement to another, as shown by record from zinc strips. (See tables appended.)

Sixth term. Inclination-of-tape correction. (See tables appended.)

Seventh term. Temperature correction to reduce distances by tape, at tape temperature, to 62° Fahr. (see temperature tables); and the second member is the corrected length of base line for each measurement.

DISCUSSION OF RESULTS.

Benton base.—The mean of the three wholly independent measurements=9870'.378. The mean of the second and third=9870'.415, giving a difference of about four one-hundredths of a foot.

But the first measurement was rejected in the field, owing to the high and uncertain temperature of the tape when working in the sun over heated ground, and to the fact that it was made principally for practice as the first application of the method. (See note under table of temperatures.)

The mean of the second and third, then, is taken as the true result and its probable error is, from the results themselves, $\pm 0'.0185$ and this (the usual standard of comparison) is 1 in 533,000.

Adopted Benton base at its own elevation above sea level = 9870'.415.

Trover's Point base.—The mean of the three measurements (independent for 32 tapes)=9711'.908. The mean of the second and third measurements=9711.904, giving a difference of four one-thousandths of a foot, or the two are, for all practical purposes, identical.

But the first measurement was incidentally made while setting the zinc strips during a large change of temperature, as shown by only one thermometer, and that the uncomparared one. (See tables of temperature.) Also, there were but six persons to assist the observer and the time taken was large, 2½ hours.

The mean of the second and third is then taken as the true result and its probable error from the results themselves= $\pm 0'.0078$, or one in 1,250,000 parts of the base.

Adopted Trover's Point base at its own elevation above sea level = 9711'.904.

OLNEY BASE.

Determination of one tape-length at 62° Fahr.—The value of one tape-length (l) from 0 graduation to the 299-foot graduation is twice determined from the following equations, where the terms are as before described :

$$(1) \quad 36l + \frac{l+1 \text{ foot}}{6} + 4'.327 + 1'.500 - 0'.133 - 0'.126 - 0'.489 = 10821'.9662.$$

$$(2) \quad 36l + \frac{l+1 \text{ foot}}{6} + 4'.327 + 1'.498 \pm 0'.000 - 0'.126 - 0'.618 = 10821'.9662.$$

from which, by transposing the known quantities, we have—

$$(1) \quad 36\frac{1}{6}l = 10816'.720 \text{ or } l = 299'.0799$$

$$(2) \quad 36\frac{1}{6}l = 10816'.718 \text{ or } l = 299'.0798$$

$$\text{Mean } l = 299'.07985$$

To this mean it is necessary to apply a minus correction of 0'.00085, or one in 350,000, due to the fact that the horizontal lever-arm was inadvertently lengthened by the tenth of an inch in the following manner. The bail of the weight-can had been made more secure by a smaller wire, and this wire was used in suspending the can in the former base measurements. The person carrying the can and suspending it on its hook at the Olney base used the larger lower wire, the centre of which was crowded out by the block (see drawing) farther than the bearing of the smaller wire by 0".10 by actual measurement.

The adopted value for one tape-length = 299'.079 at 62° Fahr. On the tape is a standard *as graduated* under a 16 pounds tension at 24½° Fahr., or under a tension of 1½ pounds at 62° Fahr. (using co-efficient of expansion = 0.000007 for 1° Fahr., and extension of tape = 0'.00538 for one pound tension, as given from the office of the Mississippi River Commission for this same tape.)

The mean error of the adopted result is not greater than $\pm 0'.0005$ or the probable error not greater than $\pm 0'.00034$.

NOTE.—The seventh term in the above equations contains the temperature correction for the first and second terms, and the second member is the known value of the east part of the Olney Base. (See page 303 of Professional Papers, Corps of Engineers, No. 24.)

Adopted value on tape length = $299'.079 \pm 0'.00034$ at 62° Fahr., under 16 pounds tension.

The tape is accurately subdivided, as shown by part tape measurements, the above six portions (50' each) differing by only $0''.02$ in the extreme.

COMPARISON OF STANDARD TAPE WITH 299 FEET OF THE 500-FOOT TAPE.

Two sets of comparisons of a portion of the 500-foot tape with the standard tape were made on July 10 and September 28, of which the results were identical.

The length of this portion from zero to a filed mark in tape near the 300-foot graduation is = $299'.082$, and from zero to cut in solder, at 300-foot graduation, is = $300'.082$ (each under a tension of 16 pounds at 62° Fahr.) The *filed* mark and *cut* in solder are one foot apart by boxwood scale measurement.

Respectfully submitted.

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Secretary Missouri River Commission.

APPENDIX A 3d.

MEASUREMENTS OF THE BENTON BASE.

The three measurements of the Benton Base are expressed by the following equations:

$$(1) 33 \times 299'.079 - 1'.809 - 0'.180 + 0'.975 + 1'.711 = 9870'.304.$$

$$(2) 33 \times 299'.079 - 0'.000 - 0'.180 + 0'.795 + 0'.221 = 9870'.443.$$

$$(3) 33 \times 299'.079 + 0'.250 - 0'.180 + 0'.928 - 0'.217 = 9870'.388.$$

First term is number of tapes multiplied by length of tape at 62° Fahr.

Second term is sum of distances set forward or backward on zincs.

Third term is inclination-of-tape correction.

Fourth term is distance between mark on zinc 33 and Δ West Base.

Fifth term is temperature correction to reduce 33 tapes, at tape temperature, to 62° Fahr., and the second member is the corrected independent result for each measurement.

The mean of the three measurements is = $9870'.378$; the mean of the second and third measurements is = $9870'.415$, giving a difference of about four one-hundredths of a foot. But the first measurement was rejected in the field. (See note under the table of temperatures.)

The mean of the second and third is then taken as the true result.

The probable error of this result, from the individual results, is = $\pm 0'.0185$, or one in 533,000 parts of the base.

Benton Base, at its own elevation above sea-level = $9870'.415$.

Respectfully submitted.

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Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers, U. S. A., Secretary Missouri River Commission.

Temperatures of Benton Base.

No. of tape.	First measurement.			Second measurement.			Third measurement.		
	July 10, 1885. Time.	Thermometers.		July 11, 1885. Time.	Thermometers.		July 11, 1885. Time.	Thermometers.	
		G.	H.		G.	H.		G.	H.
	P. M.	° F.	° F.	P. M.	° F.	° F.	P. M.	° F.	° F.
1	2 15	87	89	7 37	68.5	69	9 29	64	64.5
2	19	88	89.5	43½	68	68.5	31	63.5	64
3	21	86.5	87.5	46	68.5	69.5	34½	62	63
4	24	87	88.5	48	69	69.5	37½	62	63
5	27	85.5	88	50	69	69.5	39½	61.5	62
6	35	88	88.5	52	69	69.5	44	61	62
7	39	88	88.5	54	68	68.5	46	61.5	62
8	42	87.5	90	56	67.5	68	49	61.5	62
9	44	87.5	88.5	58	68	68.5	51	62	62
10	47½	88	89	8 00½	67.5	68.5	54½	61.5	62
11	50	89.5	89.5	02½	68	69	57	61	61.5
12	53	88.5	90	05	68	69	59	61.5	62
13	56½	88	89.5	07	68	68	10 01½	61	61.5
14	3 00	88	90	08½	68	68.5	04	61	61
15	04	88	89	10	67	68	06½	61	61
16	11½	88.5	90.5	12½	67	68	09	60	61
17	15	88	90	14½	67	67.5	11	61	61
18	18	89	90	17	66.5	67.5	14	60	60.5
19	21	90.5	90	19	66	67	16½	60.5	60
20	24	90	91	21	66	66.5	19	60	60
21	26½	89	90.5	23	66	66.5	21½	59	59.5
22	30	89	88.5	24½	66	66.5	25	58	59
23	36	86	87	26½	65	66	36	59	59.5
24	40	86	86	28½	64.5	65	40	58	59
25	43	87	88	30½	64	64	42	59	59
26	46	86.5	87.5	32½	64	64	44	59	59.5
27	49	86.5	87	34½	63.5	64	47	58	59
28	53	86.5	87.5	36½	63.5	64	49½	59	59
29	56	87	87.5	38½	63	63.5	52	58	58
30	59	86	87.5	40	63.5	64	55	57.5	58
31	4 01½	85.5	86	42	64	64.5	57½	57	57.5
32	04	85	86.5	43½	64	65	11 00	56	57
33	08½	89	89	45½	65	66	03	56	57
Means		{ 85	120		210.5	231.0		1.0	17.0
Corrected		{ 87.58	88.64		66.38	67		60.03	60.52
		— .80			—1.17			—1.18	
Corr. means		86.78			65.21			58.85	

NOTE.—G is a compared thermometer of the Mississippi River Commission, and H is an uncomparing thermometer, graduated only to 2° intervals, belonging to Mr. Humphreys.

The first measurement was made with the thermometers uncovered and in the sun, in the afternoon of a warm day, when the ground was very much heated. It was noticed that in carrying the thermometers at a higher elevation, in passing from one stake to the next, the mercury usually fell about two degrees. This measurement was also in part for practice, and no weight is given to it in the final result.

The second measurement was begun late in the afternoon of a cooler, somewhat hazy day, and finished without the aid of lamps.

The third measurement was made on the same evening, but entirely by lamp-light. The wind during second and third measurements was very slight, almost a calm, and from the west, or in the direction of the base line.

Measurement of the differences at end of each tape, Benton Base Line

[The second measurement is taken as a standard, and the differences, as recorded are taken as corrections to the first and third measurements.]

No. of tapes.	Second measurement—first measurement.			Second measurement—third measurement.		
	Readings on zinc.	Correction.	Reduced.	Readings on zinc.	Correction.	Reduced.
	"	"	"	"	"	"
1	-0.53	.....	- 0.53	+0.12	.....	+0.12
2	-1.09	.....	- 1.09	+0.23	.....	+0.23
3	-1.59	.....	- 1.59	-2.61	§ +3.00	+0.39
4	-2.12	.....	- 2.12	-2.45	.....	+0.55
5	-2.62	.....	- 2.62	-2.33	.....	+0.67
6	-0.04	- 3.21*	- 3.25	-2.13	.....	+0.87
7	-0.59	.....	- 3.80	-1.95	.....	+1.05
8	-1.18	.....	- 4.39	-1.82	.....	+1.18
9	-1.18	.....	- 4.99	-1.68	.....	+1.32
10	-2.29	.....	- 5.50	-1.52	.....	+1.48
11	-2.93	.....	- 6.14	-1.38	.....	+1.62
12	-3.57	.....	- 6.78	-1.24	.....	+1.76
13	-4.22	.....	- 7.43	-1.14	.....	+1.86
14	-4.86	.....	- 8.07	-0.98	.....	+2.02
15	-5.54	.....	- 8.75	-0.87	.....	+2.13
16	+1.32	† -10.71	- 9.39	-0.72	.....	+2.28
17	+0.71	.....	-10.00	-0.60	.....	+2.40
18	+0.06	.....	-10.75	-0.46	.....	+2.54
19	-0.60	.....	-11.31	-0.31	.....	+2.69
20	-1.30	.....	-12.00	-0.15	.....	+2.85
21	-1.86	.....	-12.57	0.00	.....	+3.00
22	-2.47	.....	-13.18	+0.17	.....	+3.17
23	-3.03	.....	-13.74	+0.39	.....	+3.39
24	-3.58	.....	-14.29	+0.40	.....	+3.40
25	-4.20	.....	-14.91	+0.49	.....	+3.49
26	-4.76	.....	-15.47	+0.59	.....	+3.59
27	-5.35	.....	-16.06	+0.70	.....	+3.70
28	+5.08	‡ -21.71	-16.63	+0.77	.....	+3.77
29	+4.45	.....	-17.26	+0.96	.....	+3.96
30	+3.91	.....	-17.80	+1.10	.....	+4.10
31	+3.35	.....	-18.36	+1.24	.....	+4.24
32	+2.77	.....	-18.94	+1.41	.....	+4.41
33	+2.12	.....	-19.59	+1.58	.....	+4.58

*Set back 3".21 on zinc No. 5, first measurement.

†Set back 7".50 on zinc No. 15, first measurement.

‡Set back 11".00 on zinc No. 27, first measurement.

§Set ahead 3".00 on zinc No. 2, third measurement.

APPENDIX A 3e.

MEASUREMENTS OF THE TROVER'S POINT BASE.

The three measurements of the Trover's Point Base are expressed by the following equations:

$$(1) 32 \times 299'.079 + 140'.033 + 1'.662 \pm 0'.000 - 0'.240 - 0'.067 = 9711'.916.$$

$$(2) 32 \times 299'.079 + 140'.033 + 1'.662 - 0'.120 - 0'.240 + 0'.052 = 9711'.915.$$

$$(3) 32 \times 299'.079 + 140'.033 + 1'.662 + 0'.628 - 0'.240 - 0'.719 = 9711'.892.$$

Where

First term. Is number of entire tapes multiplied by length of tape at 62° Fahr.

Second term. Is distance from first measurement mark on zinc 32 to full mark on zinc 33, as measured in parts of tape under 16 pounds tension.

Third term. Is distance from full mark on zinc 33 to Δ west base, as measured with a boxwood scale.

Fourth term. Is correction to reduce second and third measurements to the first, as shown on zinc 32.

Fifth term. Is inclination-of-tape correction.

Sixth term. Is temperature correction to reduce 32 tapes, at tape temperature, to

62° Fahr.; and the second number is the corrected result for each measurement. The second term is computed from the following data:

No. of measure—0 of tape at first measure mark on zinc 32.	Time—Sept. 28, a. m.	Thermometer G.	Thermometer H.	140 grad. falls behind or ahead of full mark on zinc 33.
	<i>h. m.</i>			"
1.....	8 45	59° in shade	60° in shade	0.000.
2.....		64° in sun	66° in sun	.010 behind.
3.....		61° in shade ..	61° in shade	.035 ahead.
4.....		63° in shade	62° in shade	.065 ahead.
5.....		65° in shade	64° in shade	.090 ahead.
6.....	9 10	66° in shade	70° in sun	.080 ahead.
7.....	9 13	66° in shade ..	70° in sun	.090 ahead.
8.....	9 17	66° in shade	70° in sun	.100 ahead.
Mean ..				0''.056 = 0'.005.

140 grad. at first measure mark on zinc 32.	Time—Sept. 28, a. m.	Thermometer G.	Thermometer H.	280 grad. ahead of full mark on zinc 33.
	<i>h. m.</i>			"
1.....	9 25	67° in shade	72° in sun	0.185 ahead.
2.....	9 30	66° in shade	71° in sun	.165 ahead.
3.....	9 35	66° in shade	71° in sun	.175 ahead.
4.....	9 37	67° in shade	71° in sun	.190 ahead.
5.....	9 40	67° in shade	70° in sun	.170 ahead.
6.....	9 42	66°.75 in shade ..	70° in sun	.160 ahead.
Mean ..				0''.174 = 0'.014.

Since the tape was in the sun it is best to use the observations on the standard thermometer (G) reducing those "in shade" to "in sun" by applying a plus correction of from two to three degrees for the first series, and four degrees for the second series. We then have, with sufficient accuracy, for this 140 feet of tape (after applying a minus correction of one degree for error of thermometer), 65° for the temperature of tape for first series, and 70° for that of second series, and the minus correction, to reduce to 62°, is 0'.003 for first series, and 0'.008 for second series, which, applied to the means in the last column, reduces them to 0'.002 for first series, and 0'.006 for second series. We have then the distance between first measurement mark on zinc 32, and full mark on zinc 33. For first series

$$\left(\frac{140}{299} \times 299'.079\right) - 0'.002 = 140'.037 - 0'.002 = 140'.035$$

and for second series

$$\left(\frac{140}{299} \times 299'.079\right) - 0'.006 = 140'.037 - 0'.006 = 140'.031$$

The mean of these gives 140'.033 for the second term in the equation. The mean of the three measurements (independent for 32 tapes) = 9711'.908; the mean of the second and third measurements = 9711'.904, giving a difference of four one-thousandths of a foot, or the two are, for all practical purposes, identical.

But the first measurement was incidentally made while setting the zinc strips during a large change of temperature as shown by one thermometer, and that the uncomparared one (see table of temperatures); also there were but six persons to assist the observer and the time taken was large, 2½ hours.

The mean of the second and third is then taken as the true result, and its probable error from the results themselves = ± 0'.0078 or one in 1,250,000 parts of the base.

Trover's Point Base at its own elevation above sea level = 9711'.904.

Temperatures of Trover's Point Base.

No. of tape.	First measurement.			Second measurement.			Third measurement.		
	September 26, 1885. Time.	Thermometers.		September 28, 1885. Time.	Thermometers.		September 28, 1885. Time.	Thermometers.	
		H.	G.		G.	H.		G.	H.
	P. M.	° F.		P. M.	° F.	° F.	P. M.	° F.	° F.
1	.....	72	.....	4 20	65.5	66.5	6 16½	53.5	52.5
2	.....	71	.....	21½	65	66	20	54	53
3	.....	70	.....	25	65	65.5	25	53	53
4	.....	70	.....	27	64.5	65.5	27½	52.5	52
5	4 30	71	.....	29	64.5	66	31	51.5	51
6	.....	71	.....	31	65	66	34	54	54
7	.....	70	.....	34	65.5	66.5	37	54.5	54
8	.....	70	.....	36	65.5	66	39	53.5	53.5
9	.....	68.5	.....	38	65	66	43	53.5	54
10	.....	68.5	.....	40	65	66	47	54	54
11	5 00	68	.....	43	65	65.5	49	53.5	53
12	12	67.5	.....	46½	64.5	65	52½	53.5	53
13	.....	67	.....	48½	64.5	65	55½	53	52.5
14	.....	65	.....	50½	64	64.5	58	52.5	52.5
15	5 23	64	.....	53½	64	64	7 01½	53	52
16	.....	64	.....	55	63	64	05	51.5	51.5
17	.....	64	.....	58½	63.5	64	08½	51.5	52
18	5 38	64	.....	5 00½	63.5	64	11	51.5	52
19	.....	63.5	.....	02½	64	64	13	51	51.5
20	5 53	62	.....	04½	63.5	64	17	51	52
21	6 15	54	.....	06½	63.5	64	19½	51.5	52
22	.....	54	.....	08	63	63.5	22½	52.5	52.5
23	6 22	55	.....	10	63	63.5	26	51.5	54
24	.....	52	.....	12	63	63.5	30	51	52
25	.....	51	.....	14	63	63.5	33	50.5	51
26	6 30	51	.....	16½	63	63.5	35	51	50.5
27	35	51	.....	18	63.5	63	38	51	50
28	.....	52	.....	20	63	63.5	40½	49.5	50
29	.....	52.5	.....	22	63	64	44	49.5	51
30	6 43	57	.....	24	63.5	63.5	46	51	53
31	.....	58	.....	27	63	63	48½	53.5	54
32	6 50	59	.....	5 29	63	63	7 51½	54	54
Mean	.....	62.42			63.98	64.55		52.27	52.41
Approx. corr	.....	-1.42			-1.20			-1.05	
Corr. mean	.....	61			62.78			51.22	

NOTE.—G is a compared thermometer of the Mississippi River Commission, and H an uncomparing thermometer graduated only to 2° intervals.

The 26th was calm and smoky and not excessively warm. The first measurement was made in connection with other work and during a great range of temperature. The second measurement was made on a densely smoky day and begun after a thermometer "in sun" read the same as "in shade," and was completed by daylight without, at any time, any very strong wind. The wind blew strong, however, while the party was passing back over the line preparatory to the third measurement, and the temperature fell ten degrees.

The third measurement was wholly by lamp-light and the wind was almost a calm.

H. Ex. 28—4

Correction for inclination of tape on Trover's Point Base.

[$\sin i = \frac{h}{l}$; $\text{ver sin } i \times l = \text{correction}$; $i = \text{angle of inclination}$; $h = \text{difference of elevation}$; $l = \text{length of tape.}$]

No. of stake.	Elevation.	Difference of elevation.	Log h .	Log $\sin i$.	i .	Log $\text{ver sin } i$.	Log correction.	Correction.
	'	'			° '			'
Δ E. B.	0.0							
Zinc E. B.	1.3							
1	1.3	0.0						
2	1.4	0.1	9.00000	6.52418	0 01			
3	2.0	0.6	9.77815	7.30233	07	4.31662	6.79244	0.0006
4	2.2	0.2	9.30103	6.82521	02	3.22848	5.70420	0.0001
5	4.2	2.0	0.30103	7.82521	23	5.34988	7.82570	0.0067
6	5.3	1.1	0.04139	7.56557	13	4.85431	7.33013	0.0021
7	6.3	1.0	0.00000	7.52418	12	4.78478	7.26060	0.0018
8	8.6	2.3	0.36173	7.88591	26	5.45637	7.93219	0.0086
9	11.6	3.0	0.47712	8.00130	34	5.68938	8.16520	0.0146
10	10.2	1.4	0.14613	7.67031	16	5.03466	7.51048	0.0032
11	9.6	0.6	9.77815	7.30233	07	4.31662	6.79244	0.0006
12	8.3	1.3	0.11394	7.63812	14	4.91868	7.39450	0.0025
13	7.4	0.9	9.95424	7.47842	10	4.62642	7.10224	0.0013
14	6.7	0.7	9.84510	7.36928	08	4.43260	6.90842	0.0008
15	7.0	0.3	9.47712	7.00130	03	3.58066	6.05648	0.0001
16	7.3	0.3	9.47712	7.00130	03	3.58066	6.05648	0.0001
17	8.1	0.8	9.90309	7.42727	09	4.53491	7.01073	0.0010
18	8.6	0.5	9.69897	7.22315	06	4.18272	6.65854	0.0005
19	10.3	1.7	0.23045	7.75463	20	5.22848	7.70430	0.0051
20	12.3	2.0	0.30103	7.82521	23	5.34988	7.82570	0.0067
21	17.5	5.2	0.71600	8.24018	1 00	6.18271	8.65853	0.0456
22	17.5	0.0						
23	16.4	1.1	0.04139	7.56557	12	4.78478	7.26060	0.0018
24	13.9	2.5	0.39794	7.92212	29	5.55121	8.02703	0.0106
25	12.0	1.9	0.27875	7.80293	22	5.31127	7.78709	0.0061
26	11.0	1.0	0.00000	7.52418	12	4.78478	7.26060	0.0018
27	10.5	0.5	9.69897	7.22315	06	4.18272	6.65854	0.0005
28	9.8	0.7	9.84510	7.36928	08	4.43260	6.90842	0.0008
29	12.0	2.2	0.34242	7.86660	25	5.42230	7.89812	0.0079
30	16.5	4.5	0.65321	8.17739	52	6.05842	8.53424	0.0342
31	18.4	1.9	0.27875	7.80293	22	5.31127	7.78709	0.0061
32	22.8	4.4	0.64345	8.16763	51	6.04156	8.51738	0.0329
Δ W. B.	27.4	4.6	0.66276	*8.18694	53	6.07496	8.55078	0.0356
								-0.2403

* Part of tape = 140 feet.

Measurement of the differences at end of each tape, Trover's Point Base Line.

[The first measurement is taken as a standard, and the differences, as recorded, are taken as corrections to the second and third measurements.]

No. of tapes.	First measurement—second measurement.			First measurement—third measurement.		
	Reading on zinc.	Correction.*	Reduced.	Reading on zinc.	Correction.*	Reduced.
	"	"	"	"	"	"
1	+0.160	.....	+0.160	+0.415	.....	+0.415
2	+0.225	.....	+0.225	+0.720	.....	+0.720
3	+0.335	.....	+0.335	+1.090	.....	+1.090
4	+0.455	.....	+0.455	+1.490	.....	+1.490
5	+0.550	.....	+0.550	+1.885	.....	+1.885
6	+0.645	.....	+0.645	+2.230	.....	+2.230
7	+0.725	.....	+0.725	+2.595	.....	+2.595
8	+0.775	.....	+0.775	+2.920	.....	+2.920
9	+0.835	.....	+0.835	+3.270	.....	+3.270
10	+0.885	.....	+0.885	+3.600	.....	+3.600
11	+0.960	.....	+0.960	+3.940	.....	+3.940
12	+0.985	.....	+0.985	+4.245	.....	+4.245
13	+1.030	.....	+1.030	+4.575	.....	+4.575
14	+1.030	.....	+1.030	+4.825	.....	+4.825
15	+1.040	.....	+1.040	+5.090	.....	+5.090
16	+1.045	.....	+1.045	+5.410	.....	+5.410
17	+1.085	.....	+1.085	+5.700	.....	+5.700
18	+1.115	.....	+1.115	+6.000	.....	+6.000
19	+1.060	.....	+1.060	+6.255	.....	+6.255
20	+1.045	.....	+1.045	+6.515	.....	+6.515
21	+0.835	.....	+0.835	+6.690	.....	+6.690
22	+0.605	.....	+0.605	+6.735	.....	+6.735
23	+0.385	.....	+0.385	+6.840	.....	+6.840
24	+0.110	.....	+0.110	+6.890	.....	+6.890
25	-0.160	.....	-0.160	+6.920	.....	+6.920
26	-0.465	.....	-0.465	+6.925	.....	+6.925
27	-0.700	.....	-0.700	+7.005	.....	+7.005
28	-0.915	.....	-0.915	+7.115	.....	+7.115
29	-1.120	.....	-1.120	+7.225	.....	+7.225
30	-1.280	.....	-1.280	+7.305	.....	+7.305
31	-1.390	.....	-1.390	+7.430	.....	+7.430
32	-1.445	.....	-1.445	+7.535	.....	+7.535

* No correction.

COMPARISON OF STANDARD TAPE WITH 299 FEET OF THE 500-FOOT TAPE.

[Done in connection with the Benton and Trover's Point Base Line measurements.]

The portion of the broken 500-foot tape used bears graduation marks every ten feet from 0 to 430', and there is one splice in it. A mark is *filed* in the tape to represent 299' of the standard tape as graduated. A mark is also *cut* in the solder on the first portion of the imperfectly marked 300-foot graduation at just one foot, by box-wood scale, from the filed mark.

Clamps were made fast to the tape near the zero and the 300-foot graduations; then the same apparatus, weight, and method as used in base-line measurements was alternately applied in stretching the tape. The standard tape was first stretched and a mark made on the zinc at the 299-foot graduation, which mark was the standard of comparison.

On July 10, at the Benton base, seven comparisons were made, giving a mean result for length from zero to *filed* mark on 500-foot tape = $0''.035 = 0'.003$ longer than the standard tape, or = 299'.082 under a 16-pounds tension at 62° Fahr. (Mean temperature at the time of comparison was 80° Fahr.) An identical result from five comparisons at Trover's Point base on September 28 was obtained; mean temperature at the time of comparison was 66° Fahr.

The adopted length of the 500-foot tape from the zero graduation to the cut in the solder at the 300-foot graduation is = 300'.082 at 62° Fahr. under 16 pounds tension.

Respectfully submitted.

O. B. WHEELER,
Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission.

APPENDIX A 3f.

OLNEY BASE.

Determination of one tape-length at 62° Fahr.

The first measurement at the mean temperature of the tape at the time of measurement may be expressed as follows:

$$36 \text{ tapes} + \frac{1 \text{ tape} + 1 \text{ foot}}{6} + 1'.500 - 0'.127 + 4'.327 - 0'.133 = 10821'.9662$$

where:

First term is number of entire tape lengths (between 0 and 299 foot graduations).

Second term is distance between second measurement mark on zinc 36^a, which mark is the mean of six successive applications of 50' portions of tape under a strain of 16 pounds, and for the last 50' applying one foot of a box-wood scale to the 299-foot graduation to make out the 50'. (The extreme of the six marks on stake 36^a were but 0.02 of an inch apart.)

Third term is amount set ahead = 8'' on stake 17, and 10'' on stake 28.

Fourth term is the total inclination-of-tape correction.

Fifth term is the distance from the mark on 36^a, above noted, to the mark on zinc over Δ middle base as measured with a box-wood scale.

Sixth term is the reduction of first measurement mark to second measurement mark, as shown on zinc 36, and the second member is the known distance between Δ east base and Δ middle base. (See page 303, No. 24, of Professional Papers, Corps of Engineers.)

Transposing the known quantities in the equation to the second member we have: $36\frac{1}{6}$ tapes = 10816'.232; or one tape, at tape temperature (55°.54 Fahr.) = 299'.0663.

The reduction to 62° Fahr., with coefficient of expansion = 0.000007, is = 0'.0136; or one tape at 62° Fahr., under 16 pounds tension = 299'.0799.

The second measurement, at the mean temperature of the tape at the time of measurement, may be expressed as follows:

$$36 \text{ tapes} + \frac{1 \text{ tape} + 1 \text{ foot}}{2} + 1'.498 - 0'.127 + 4'.327 = 10821'.9662$$

where the terms are the same as above described except that the third term is amount set forward = 9'' on stake 12, and 8''.98 on stake 27, and the sixth term is zero.

From this equation we obtain: $36\frac{1}{6}$ tapes = 10816'.101; or one tape, at tape temperature, 53°.83 Fahr., = 299'.0627. The reduction, to 62° Fahr., is = +0.0171; or one tape, at 62° Fahr., under 16 pounds tension = 299'.0798.

The difference in the two measurements is, for 36 tapes, expressed by the difference between the sixth term in the first equation (0'.133) and the product of (10816' - 50'), (55.54 - 53.83), and 0.000007; or by 0'.133 - 0'.129 = 0.004 of a foot. This difference in the two measurements is one in 2,700,000.

The mean of the two values for one tape is 299'.07985. To this it is necessary to apply a minus correction (of 0'.00085, or about 1 in 350,000), due to the fact that the horizontal lever-arm was inadvertently lengthened by the tenth of an inch (0''.10), in the following manner: Before measuring the Benton base the bail of the weight-can had been made more secure by a smaller wire, and this wire was used in suspending the can. The person carrying and suspending the can, on its hook, at the Olney base, used the larger lower wire, the center of which was crowded out by the block (see drawing) farther than the bearing of the smaller wire by 0''.10, by actual measurement.

The adopted value for one tape length = 299'.079 at 62° Fahr., under 16 pounds tension.

The tape is a standard *as graduated* under a 16-pounds tension at 24½° Fahr., or under a tension of 1½ pounds at 62° Fahr. [using coefficient of expansion = 0.000007 for 1° Fahr. and extension of tape = 0'.00538 for one pound tension; as given for this same tape from the office of the Mississippi River Commission].

The mean error of the adopted value is not greater than ±0'.0005, or the probable error not greater than ±0'.00034.

Respectfully submitted.

O. B. WHEELER,
Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission.

Temperatures of Olney Base.

Number of tape.	First measurement.			Second measurement.		
	Oct. 28, 1885. Time.	Thermometers.		Oct. 28, 1885. Time.	Thermometers.	
		G.	H.		G.	H.
	A. M.	° F.	° F.	P. M.	° F.	° F.
1	10:11	55.0	56.0	2:10	54.5	55.5
2	16	55.	56.	14	54.5	55.
3	21	55.5	56.	17½	54.8	55.
4	26	56.3	56.	23	54.8	54.5
5	31	56.8	56.5	27	54.8	55.
6	35	57.0	56.5	32	54.5	54.5
7	40	57.0	57.	38	54.3	54.5
8	44	57.0	57.	42	54.0	54.5
9	48	57.2	57.	46	54.1	54.5
10	52	57.	57.5	50	54.1	54.5
11	55½	57.5	58.	53	54.3	55.
12	59½	57.7	57.5	56½	54.5	55.
13	11:02½	57.2	57.5	3:05	54.6	55.5
14	06	58.	58.	08	54.9	56.
15	10	56.	57.	11	55.	55.5
16	13	56.	57.	16	55.	55.5
17	16	57.	57.5	19	55.1	55.5
18	25	57.	57.	23½	55.	55.5
19	29	56.7	56.5	27½	55.	56.
20	33.	56.7	57.	31	55.1	56.
21	37	57.	56.	34½	55.3	56.
22	40	56.7	57.	38	55.4	56.
23	45	56.5	56.5	43	55.4	56.
24	50	56.	56.	47	55.6	56.
25	53½	56.5	56.5	52	55.5	56.
26	57½	56.5	56.5	56	55.5	56.
	P. M.					
27	12:01	56.4	56.5	4:00	55.5	56.
28	04½	56.8	56.5	09	55.5	56.
29	09	55.8	56.5	13	55.5	56.
30	16½	56.3	57.	18	55.6	56.
31	21½	56.1	57.	23	55.5	56.
32	25½	56.3	57.	27	55.2	56.
33	33	57.1	57.5	31	55.1	56.
34	36	57.9	57.5	35	55.0	55.5
35	40	58.	58.	39	55.0	55.5
36	46	57.5	58.	42	55.	55.5
36 ^a	.....	.....	.....	4:50 to 5:03	55.	55.4
	.....	61.0	69.0		35.5	17.9
Mean		56.69	56.92		54.96	55.48
Correction ..		=1.15	.....		-1.13	.....
Correct mean		55.54	.....		53.83	.....

First measurement—second measurement = $55^{\circ}.54 - 53^{\circ}.83 = 1^{\circ}.71$ F.

NOTE.—The morning was completely overcast after a rainy night. Wind easterly but slight. Mist-
ing quite hard at beginning of second measurement. The atmosphere was about at complete satura-
tion.

G thermometer is a compared one of the Mississippi River Commission.

H thermometer is a private one of Mr. Humphreys, and uncomparad.

Correction for inclination of tape on Olney Base.

[$\sin i = \frac{h}{l}$; correction = $\text{ver sin } i \times l$; i = angle on inclination; h = difference of elevation; l = length of tape.]

No. of stake.	Elevation.	h	Log h .	Log $\sin i$.	i	Log ver $\sin i$.	Log correction.	Correction.
	'	'			° ' "			'
△ E. B.	107.78	.....	.....	.....	.....	.....	.....	.....
Zinc △ E. B. ...	112.28	.....	.....	.....	.....	.....	.....	.....
1	106.48	5.80	0.76343	8.28765	1 06 40	6.27423	8.75001	0.0562
2	103.52	2.96	0.47129	7.99551	34 00	5.68938	8.16516	0.0146
3	102.94	0.58	9.76343	7.28765	6 40	4.27424	6.75002	0.0006
4	103.17	0.23	9.36173	6.88595	2 40	3.47836	5.95414	0.0001
5	104.01	0.84	9.92428	7.44850	9 40	4.59698	7.07276	0.0012
6	104.20	0.19	9.27875	6.80297	2 10	3.29800	5.77378	0.0001
7	103.88	0.32	9.50515	7.02937	3 40	3.75496	6.23074	0.0002
8	103.44	0.44	9.64345	7.16767	5 00	4.02436	6.50014	0.0003
9	103.80	0.36	9.55630	7.08052	4 10	3.86600	6.34178	0.0002
10	103.64	0.16	9.20412	6.72834	1 50	3.15290	5.62968	0.0000
11	103.01	0.63	9.79934	7.32356	7 15	4.34710	6.82288	0.0007
12	102.90	0.11	.....	.....	.....	.....	.....	0.0000
13	103.16	0.26	9.41497	6.93919	3 00	3.58066	6.05644	0.0001
14	102.02	1.14	0.05690	7.58112	13 10	4.86538	7.34116	0.0022
15	103.38	1.36	0.13354	7.65776	15 40	5.01638	7.49216	0.0031
16	103.95	0.57	9.75587	7.28009	6 30	4.25225	6.72803	0.0005
17	103.94	0.01	.....	.....	.....	.....	.....	.....
18	103.63	0.31	9.49136	7.01558	3 30	3.71456	6.19034	0.0002
19	103.37	0.26	.....	.....	.....	.....	.....	0.0001
20	103.45	0.08	.....	.....	.....	.....	.....	0.0000
21	103.57	0.12	.....	.....	.....	.....	.....	0.0000
22	103.16	0.41	9.61278	7.13700	4 40	3.96444	6.44022	0.0003
23	103.01	0.15	.....	.....	.....	.....	.....	0.0000
24	102.84	0.17	9.23045	6.75467	1 55	.....	.....	0.0000
25	102.43	0.41	.....	.....	.....	.....	.....	0.0003
26	102.41	0.02	.....	.....	.....	.....	.....	0.0000
27	102.25	0.16	.....	.....	.....	.....	.....	0.0000
28	101.61	0.64	9.80618	7.33040	7 20	4.35702	6.83280	0.0007
29	104.05	2.44	0.38739	7.91167	28 00	5.52074	7.99652	0.0099
30	106.85	2.80	0.44716	7.97138	32 10	5.64124	8.11702	0.0131
31	103.45	3.40	0.53148	8.05570	39 05	5.81041	8.28619	0.0193
32	104.26	0.81	9.90849	7.43271	9 20	4.56650	7.04228	0.0011
33	104.12	0.14	.....	.....	.....	.....	.....	0.0000
34	104.13	0.01	.....	.....	.....	.....	.....	0.0000
35	103.44	0.69	9.83885	7.36307	7 55	4.42351	6.89929	0.0008
36	104.16	0.72	9.85733	7.38155	8 20	4.46806	6.94384	0.0009
(50') 36a	103.90	0.26	9.41497	7.71600	17 53	5.13132	6.83029	0.0007
Zinc △ M. B. ..	103.88	0.02	.....	.....	.....	.....	.....	.....
△ Mid. base ..	100.00 = (assumed elevation.)						Total.....	0.1275

Measurement of the differences at end of each tape, Olney Base.

No. of tapes.	Second measurement—first measurement.			Remarks.
	Reading on zinc.	Correction.	Reduced.	
	"		"	
1	+ 0.02		+ 0.02	The last column contains accumulative differences in the two measurements, due to incidental errors and to expansion in tape, for which, if a difference of temperature correction be taken, it is then possible to compute a probable error for one tape measurement.
2	+ 0.04	.....	+ 0.04	
3	+ 0.05	.....	+ 0.05	
4	+ 0.06	.....	+ 0.06	
5	+ 0.03	.....	+ 0.03	
6	+ 0.01	.....	+ 0.01	
7	— 0.14	.....	— 0.14	
8	— 0.20	.....	— 0.20	
9	— 0.29	.....	— 0.29	
10	— 0.39	.....	— 0.39	
11	— 0.49	.....	— 0.49	
12	— 0.58	.....	— 0.58	
13	+ 8.32	+ 9".00	— 0.68	Set ahead on second measurement, on zinc 12, 9".00.
14	+ 8.22		— 0.78	Set ahead on first measurement on zinc 17, 8".00.
15	+ 8.15	.....	— 0.85	
16	+ 8.08	.....	— 0.92	
17	+ 8.00	.....	— 1.00	
18	— 0.10	— (8".00 — 9".00)	— 1.10	
19	— 0.13	.....	— 1.13	
20	— 0.24	.....	— 1.24	
21	— 0.28	.....	— 1.28	
22	— 0.32	.....	— 1.32	
23	— 0.34	.....	— 1.34	
24	— 0.27	.....	— 1.27	
25	— 0.28	.....	— 1.28	
26	— 0.31		— 1.31	The second measurement is taken as a standard, and the differences recorded as corrections to the first measurement.
27	— 0.31	.....	— 1.31	
28	+ 8.65	— (— 8".98 + 8".00 — 9".)	— 1.33	
29	— 1.31	— (10". — 8".98 + 8" — 9".)	— 1.27	
30	— 1.32	.....	— 1.30	
31	— 1.35	.....	— 1.33	
32	— 1.34	.....	— 1.32	
33	— 1.43	.....	— 1.41	
34	— 1.51	.....	— 1.49	
35	— 1.55	.....	— 1.53	
36	— 1.61	.....	— 1.59	

APPENDIX A 3g.

OFFICE OF THE MISSISSIPPI RIVER COMMISSION,
Saint Louis, Mo., February 11, 1886.

DEAR SIR: I find in Mr. Wisner's note-books the following values of divisions of levels:

T. & S. No. 1. Tube No. 2. First Division=1".70.

T. & S. No. 1. Striding Level. First Division=1".171.

T. & S. No. 2. Striding Level. First Division=1".24.

Very respectfully, yours,

L. L. WHEELER.

Mr. O. B. WHEELER,
U. S. Assistant Engineer.

VALUE OF STRIDING LEVEL, T. & S. THEODOLITE, No. 1.

The following readings were taken, at the Benton Base, for the value of one division of the striding level used in azimuth work at the Benton and Trover's Point Bases; the level was placed on the telescope tube of the theodolite, and a common leveling rod set up at a distance of two tape lengths (or 598'.16):

	Level.		Rod.	
	E.	W.		
	34 divisions.	34 divisions.	3.844	(Not used in computing.)
(1).....	20.0 50.4	50.0 20.0	3.755 3.9275	1 div. = $\frac{.1725}{30.2 \times 598.16} = 1''.975$
Mean.....	30.4 30.2	30.0	.1725	
(2).....	50.3 22.	20.5 49.8	3.919 3.7455	1 div. = $\frac{.1735}{28.8 \times 598.16} = 2''.066$
Mean.....	28.3 28.8	29.3	.1735	
(3).....	19.2 47.8	53.0 24.5	3.737 3.899	1 div. = $\frac{.162}{28.55 \times 598.16} = 1''.960$
Mean.....	28.6 28.55	28.5	.162	Mean value 1 division = 2''.000

Respectfully submitted.

O. B. WHEELER,
Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers, U. S. A., Secretary Missouri River Commission.

APPENDIX A 3h.

Table showing approximate slope of river from Fort Benton to Trover's Point, derived from levels taken between July 20, 1885, and September 30, 1885.

[Corrected by readings on Fort Benton gauge.]

Date.	Number of B. M.	Water surface.				Distance between B. M.	Slope per mile between B. M.	Total fall from Fort Benton.
		Recorded elevation.	Change in gauge.	Corrected for gauge reading.	Fall between B. M.			
1885.		Feet	Feet.	Feet.	Feet.	Miles.	Feet.	Feet.
July 20	"Powers," W. G. B. M.	2,690.33	0.00	2,690.33	00.00	0.38	0.00	00.00
22	".....	2,650.98	-0.40	2,657.38	32.95	7.80	4.22	32.95
23	".....	2,646.25	-0.60	2,646.85	10.53	3.42	3.08	43.48
23	".....	2,636.88	-0.60	2,637.48	9.37	3.00	3.12	52.85
24	".....	2,628.16	-0.70	2,628.86	8.62	2.40	3.59	61.47
25	Mouth of Marias	2,622.00	-0.80	2,622.80	6.06	1.56	3.88	67.53
27	".....	2,621.02	-1.00	2,622.02	0.78	0.46	1.70	68.31
27	".....	2,613.97	-1.00	2,614.97	7.05	2.47	2.85	75.36
27	".....	2,610.39	-1.00	2,611.39	3.58	1.53	2.34	78.94
28	".....	2,606.12	-1.00	2,607.12	4.27	1.44	2.96	83.21
28	".....	2,601.30	-1.00	2,602.30	4.82	1.67	2.88	88.03
28	Boat Creek	2,598.85	-1.00	2,599.85	2.45	1.03	2.38	90.48

Table showing approximate slope of river from Fort Benton to Trover's Point, &c.—Cont'd.

Date.	Number of B. M.	Water surface.				Distance between B. M.	Slope per mile between B. M.	Total fall from Fort Benton.
		Recorded elevation.	Change in gauge.	Corrected for gauge reading.	Fall between B. M.			
1885.		Feet.	Feet.	Feet.	Feet.	Miles.	Feet.	Feet.
July 29	15	2,593.39	—1.00	2,594.39	5.46	1.86	2.93	95.94
29	16	2,589.07	—1.00	2,590.07	4.32	2.11	2.05	100.26
30	Hd. Bend above Coal Bank.	2,584.20	—1.00	2,585.20	4.87	2.07	2.35	105.13
30	17	2,580.62	—1.00	2,581.62	3.58	2.35	1.52	108.71
31	18	2,573.92	—1.00	2,571.92	6.70	4.47	1.50	115.41
31	19	2,570.59	—1.00	2,571.59	3.33	3.81	0.87	118.74
Aug. 1	20	2,562.70	—1.00	2,563.70	7.89	4.19	1.88	126.63
3	21	2,557.94	—1.20	2,559.14	4.56	5.01	0.91	131.19
3	22	2,553.05	—1.20	2,554.25	4.89	2.69	1.82	136.08
4	23	2,549.37	—1.30	2,550.67	3.58	1.98	1.82	139.66
4	24	2,542.23	—1.30	2,543.53	7.14	2.70	2.65	146.80
5	25	2,538.58	—1.40	2,539.98	3.55	2.39	1.49	150.35
5	Hole in Wall.	2,537.50	—1.40	2,538.90	1.08	0.43	2.51	151.43
5	26	2,529.96	—1.40	2,531.36	7.54	3.58	2.11	158.97
6	27	2,524.22	—1.50	2,525.72	5.64	3.64	1.55	164.61
7	Ring bolt.	2,518.23	—1.55	2,519.78	5.94	3.68	1.61	170.55
8	28	2,508.26	—1.60	2,509.86	9.92	4.01	2.47	180.47
8	29	2,498.01	—1.60	2,499.61	10.25	4.36	2.35	190.72
10	30	2,490.95	—1.70	2,492.65	6.96	2.64	2.63	197.68
11	31	2,483.61	—1.75	2,485.36	7.29	3.67	1.98	204.97
11	32	2,479.40	—1.75	2,481.15	4.21	3.64	1.16	209.18
12	33	2,468.49	—1.80	2,470.29	10.86	3.53	3.08	220.04
12	34	2,461.46	—1.80	2,463.26	7.03	2.05	3.43	227.07
13	35	2,457.06	—1.85	2,458.91	4.35	2.41	1.80	231.42
15	+1882, bench-mark	2,448.79	—2.10	2,450.89	8.02	2.69	3.00	239.44
15	36	2,439.60	—2.10	2,441.70	9.19	3.31	2.78	248.63
17	37	2,427.29	—2.15	2,429.44	12.26	3.55	3.45	260.89
17	38	2,414.47	—2.15	2,416.62	12.82	4.28	3.00	273.71
18	39	2,403.54	—2.20	2,405.74	10.88	4.29	2.54	284.59
21	40	2,394.71	—2.30	2,397.01	8.73	3.10	2.82	293.32
22	41	2,386.90	—2.30	2,389.20	7.81	4.37	1.79	301.13
22	42	2,378.99	—2.30	2,381.29	7.91	3.03	2.61	309.04
24	43	2,374.76	—2.00	2,376.76	4.53	2.82	1.61	313.57
24	44	2,366.27	—2.00	2,368.27	8.49	4.48	1.90	322.06
24	45	2,357.21	—2.00	2,359.21	9.06	3.11	2.91	331.12
25	46	2,347.94	—1.90	2,349.84	9.37	4.65	2.02	340.49
26	47	2,342.94	—1.92	2,344.86	4.98	3.85	1.32	345.47
26	48	2,340.12	—1.92	2,342.04	2.82	2.23	1.26	348.29
26	49	2,336.00	—1.92	2,337.92	4.12	2.62	1.57	352.41
27	50	2,330.30	—1.80	2,332.10	5.82	2.54	2.29	358.23
27	51	2,327.29	—1.80	2,329.09	3.01	2.58	1.17	361.24
28	52	2,325.42	—1.65	2,327.07	2.02	2.35	0.86	363.26
29	53	2,319.71	—1.60	2,321.31	5.76	4.04	1.42	369.02
29	54	2,313.66	—1.60	2,315.26	6.05	4.46	1.36	375.07
29	55	2,310.82	—1.60	2,312.42	2.84	3.86	0.74	377.91
Sept. 2	56	2,302.90	—1.80	2,304.70	7.72	4.16	1.13	385.63
2	57	2,299.89	—1.80	2,301.69	3.01	2.22	1.36	388.64
2	58	2,294.28	—1.80	2,296.08	5.61	2.75	2.04	394.25
3	59	2,291.19	—1.85	2,293.04	3.04	2.62	1.16	397.29
3	60	2,287.43	—1.85	2,289.28	3.76	3.35	1.12	401.05
4	61	2,282.56	—1.90	2,284.46	4.82	2.48	1.94	405.87
5	62	2,278.71	—1.90	2,280.61	3.85	2.56	1.50	409.72
7	63	2,268.29	—1.95	2,270.24	10.37	7.55	1.37	420.09
8	64	2,264.06	—2.00	2,266.06	4.18	4.13	1.01	424.27
8	65	2,258.44	—2.00	2,260.44	5.62	3.77	1.49	429.89
8	66	2,254.92	—2.00	2,256.92	3.52	2.77	1.27	433.41
9	67	2,250.77	—2.00	2,252.77	4.15	2.48	1.67	437.56
9	68	2,245.95	—2.00	2,247.95	4.82	3.04	1.59	442.38
11	69	2,243.55	—2.10	2,245.65	2.30	3.09	0.74	444.68
11	70	2,239.56	—2.15	2,241.71	3.94	2.65	1.49	448.62
11	71	2,234.22	—2.15	2,236.37	5.34	3.51	1.52	453.96
12	72	2,230.71	—2.20	2,232.91	3.46	3.33	1.04	457.42
12	73	2,225.65	—2.20	2,227.85	5.06	3.33	1.52	462.48

APPENDIX A 3i.

Table showing elevations of permanent bench-marks and corrected elevations of water surfaces, as derived from levels run between Fort Benton and Trover's Point, Montana, during the season of 1885.

Permanent bench-marks.	Distance from Fort Benton.	Elevations.					Difference in elevation between bench-marks.
		First determination.	Check.	Difference, first over check.	Adopted.	Water surface.	
	Miles.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
P. B. M., $\frac{1}{2}$	0.00	2,700.00	2,700.00	0.000	2,700.000	.....	.....
U. S. S. S., mercury in barometer.....	0.17	2,708.303	2,708.299	+0.004	2,708.301	.....	+ 8.301
Powers, July 20, W. G. bench-mark.....	0.38	2,704.560	2,704.573	-0.013	2,704.560	2,690.33	- 3.741
P. B. M., $\frac{1}{4}$	0.57	2,704.001	2,704.008	-0.007	2,704.001	.....	- 0.559
P. B. M., $\frac{1}{2}$	2.00	2,693.232	2,693.232	0.000	2,693.232	.....	-10.769
P. B. M., $\frac{3}{4}$	4.18	2,681.793	2,681.789	+0.004	2,681.793	.....	-11.439
P. B. M., $\frac{1}{2}$	6.82	2,679.801	2,679.832	-0.031	2,679.816	.....	- 1.977
P. B. M., $\frac{1}{2}$	8.18	2,668.002	2,668.007	-0.005	2,668.002	2,657.38	-11.814
P. B. M., $\frac{1}{2}$	11.60	2,659.821	2,659.807	+0.014	2,659.821	2,646.85	- 8.181
P. B. M., $\frac{1}{2}$	12.00	2,657.884	2,657.873	+0.011	2,657.884	.....	- 1.937
P. B. M., $\frac{1}{2}$	14.60	2,653.312	2,653.299	+0.013	2,653.312	2,637.48	- 4.572
P. B. M., $\frac{1}{2}$	17.00	2,639.177	2,639.182	-0.005	2,639.177	2,628.86	-14.135
P. B. M., $\frac{1}{2}$	17.33	2,644.635	2,644.658	-0.023	2,644.647	.....	+ 5.470
Opposite mouth of Marias River.....	18.56	.....	.....	.....	.....	2,622.80	.....
P. B. M., $\frac{1}{2}$	19.00	2,636.962	2,636.966	-0.004	2,636.962	2,622.02	- 7.685
P. B. M., $\frac{1}{2}$	21.47	2,633.131	.....	.....	.....	2,614.97	- 3.831
P. B. M., $\frac{1}{2}$	23.00	2,628.826	.....	.....	.....	2,611.39	- 4.305
P. B. M., $\frac{1}{2}$	24.44	2,623.767	.....	.....	.....	2,607.12	- 5.059
P. B. M., $\frac{1}{2}$	26.11	2,615.749	.....	.....	.....	2,602.30	- 8.018
Opposite Goat Creek.....	27.14	.....	.....	.....	.....	2,599.85	.....
P. B. M., $\frac{1}{2}$	27.55	2,624.557	2,624.570	-0.013	2,624.563	.....	+ 8.814
P. B. M., $\frac{1}{2}$	29.00	2,605.554	.....	.....	.....	2,594.39	-19.009
P. B. M., $\frac{1}{2}$	29.26	2,610.510	.....	.....	.....	.....	+ 4.956
P. B. M., $\frac{1}{2}$	31.11	2,606.862	.....	.....	.....	2,590.07	- 3.648
Head of bend above coal bank.....	33.18	.....	.....	.....	.....	2,585.20	.....
At coal banks, bench-mark, $\frac{1}{2}$	35.53	2,601.905	.....	.....	.....	2,581.62	- 4.957
P. B. M., $\frac{1}{2}$	36.33	2,603.649	.....	.....	.....	.....	+ 1.744
P. B. M., $\frac{1}{2}$	40.00	2,588.050	.....	.....	.....	2,574.92	-15.599
P. B. M., $\frac{1}{2}$	40.46	2,595.017	.....	.....	.....	.....	+ 6.967
P. B. M., $\frac{1}{2}$	43.81	2,580.882	.....	.....	.....	2,571.59	-14.135
P. B. M., $\frac{1}{2}$	48.00	2,595.681	.....	.....	.....	2,563.70	+14.799
P. B. M., $\frac{1}{2}$	53.01	2,573.209	.....	.....	.....	2,559.14	-22.472
P. B. M., $\frac{1}{2}$	55.70	2,581.478	.....	.....	.....	2,554.25	+ 8.269
P. B. M., $\frac{1}{2}$	57.68	2,567.619	.....	.....	.....	2,550.67	-13.859
P. B. M., $\frac{1}{2}$	58.13	2,579.728	.....	.....	.....	.....	+12.109
P. B. M., $\frac{1}{2}$	60.38	2,565.682	.....	.....	.....	2,543.53	-14.046
P. B. M., $\frac{1}{2}$	62.77	2,560.571	.....	.....	.....	2,539.98	- 5.111
At the base of wall at Hole in Wall.....	63.20	.....	.....	.....	.....	2,538.90	.....
P. B. M., $\frac{1}{2}$	66.78	2,542.301	.....	.....	.....	2,531.36	-18.270
P. B. M., $\frac{1}{2}$	70.42	2,541.724	.....	.....	.....	2,525.72	- 0.577
Bench-mark at head of Pablos Rapids, Ring bolt.....	74.10	2,521.850	2,521.862	-0.012	2,521.856	2,519.78	-19.868
P. B. M., $\frac{1}{2}$	74.29	2,533.002	2,533.023	-0.021	2,533.012	.....	+11.156
P. B. M., $\frac{1}{2}$	78.11	2,532.927	.....	.....	.....	2,509.86	- 0.085
P. B. M., $\frac{1}{2}$	78.48	2,521.225	.....	.....	.....	.....	-11.702
P. B. M., $\frac{1}{2}$	82.47	2,514.617	.....	.....	.....	2,499.61	- 6.608
P. B. M., $\frac{1}{2}$	85.11	2,507.060	.....	.....	.....	2,492.65	- 7.557
P. B. M., $\frac{1}{2}$	88.78	2,523.905	.....	.....	.....	2,485.36	+15.845
Opposite mouth of Judith River, bench-mark, $\frac{1}{2}$	92.42	2,489.941	.....	.....	.....	2,481.15	-33.964
P. B. M., $\frac{1}{2}$	95.95	2,502.074	.....	.....	.....	2,470.20	+12.133
P. B. M., $\frac{1}{2}$	98.00	2,472.530	.....	.....	.....	2,463.26	-29.544
P. B. M., $\frac{1}{2}$	100.41	2,481.401	2,481.424	-0.023	2,481.411	2,458.91	+ 8.881
P. B. M., $\frac{1}{2}$	103.00	2,481.497	2,481.521	-0.024	2,481.507	.....	+ 0.096
+ on stone 500' below house at Gallatin, foot of Gallatin Rapids, + 1882.....	103.10	2,456.417	.....	.....	.....	2,450.89	-25.090
P. B. M., $\frac{1}{2}$	106.41	2,468.725	.....	.....	.....	2,441.70	+12.308
Foot of Dauphine Rapids, bench-mark, $\frac{1}{2}$	109.96	2,445.738	.....	.....	.....	2,429.44	-22.987

APPENDIX A 4.

REPORT OF MR. JAMES A. SEDDON, ASSISTANT ENGINEER.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., July 1, 1886.

SIR: I have the honor to make the following report of the physical data department for the fiscal year ending June 30, 1886:

COMPILATION OF THE DATA.

Gauges.—Full histories of the reduction of the gauge-readings were compiled for office use; also, histories of the changes of location and zero to go with the yearly sheets of mean daily gauge-readings. The 1885 sheets have also been reduced and compiled for the 17 regular United States Engineer gauges and the Signal Service gauge-station of Hermann, Mo. All these sheets, viz, 215, with their histories, have been stereotyped and an edition is being printed. All the gauges were checked and repaired, October 14 to December 9, 1885, and again May 20 to June 13, 1886.

Cross-section and slope.—The 560 incomplete cross-sections of Lexington, Kansas City, and Leavenworth, mentioned in last Annual Report, have been traced on standard section paper, their areas measured, and tabulations and reference maps made, thus completing the compilation of cross-section data for this division, Vol. III. Seven miles of slope at Kansas City was also plotted and tabulated, completing the slope data for this division.

One hundred and forty-three cross-sections at Omaha were plotted; these, with the the 133 of last Annual Report, are still incomplete, wanting measurement of areas and tabulations.

Discharge.—The compilation of the 168 observations at Saint Charles, 1879, which was mentioned as in progress in last Annual Report, has been completed; also 1 at same point in 1878. This completes the compilations of discharge data for Saint Charles.

The compilation of the Kansas City discharges of 1883, 62 observations in all, was completed. These discharges required replotting to standard scale and the computation and plotting of elements of discharge, measurement of discharge with planimeter, calculation of datum areas, and tabulation. Nineteen discharge observations for Kaw River, at Kansas City, during the same time, were also put in shape. This completes the compilation of discharge data at Kansas City.

Twenty-nine discharge observations at Omaha, in 1882, have been put in shape, with the exception of measurements with planimeter and tabulation.

By reference to the table, as in last Annual Report, showing the condition of the compilation, it will be seen that volumes I, II, III, and IV are about complete with the exception of such miscellaneous data as may be added:

No. of volume.	Local charges at which data were collected.	Cross-sections.	Slope.	Discharged.	Borings.	Miscellaneous.	Remarks.
I	{ Saint Charles	C	C	C	⁴ / ₅ C	O	No data except low-water survey of 1882.
	{ Cedar City	C	X	X	X	O	
II	{ Boonville	C	C	X	X	X	
	{ Glasgow	C	C	X	X	O	
III	{ Lexington	C	C	X	X	O	Only a few discharges.
	{ Kansas City	C	C	C	X	O	
	{ Leavenworth	C	C	X	X	O	
IV	{ Atchison	C	C	C	X	O	
	{ Saint Joseph	C	C	C	X	O	
	{ Brownville	O	O	X	X	O	
	{ Nebraska City	C	C	¹ / ₂ C	C	O	
	{ Plattsmouth	O	O	X	C	O	
V	{ Omaha	¹ / ₂ C	O	¹ / ₂ C	O	O	Very few data here.
	{ Sioux City	O	O	O	O	O	
	{ Vermillion	X	X	X	X	O	

ABBREVIATIONS USED IN TABLE.—C is "Completed," and the degree of completion is given as a fraction of C. O is "No work done on the compilation." X is "Few, if any, data of the kind at the point."

STUDY OF THE DATA.

This has been confined to the plotting and study of gauge relations and the determination of curves of discharge-gauge variation, prior to scaling off discharges at the principal points of the river for each day of the period covered by gauge-readings.

Before stating what has been done in this line it will be necessary to give, in some detail, the reasoning on which the work rests and the steps taken.

It is accepted as an axiom that over a reach of river free from tributaries, say between two points such as Hermann and Saint Charles, if there is a steadily rising river at the upper point, that is, a steadily increasing discharge at Hermann, and if the discharge for a given time be taken at Hermann, then *some time* after the same discharge would be found at Saint Charles; of course the same holds for a steadily falling stage and for a stationary river. It is, therefore, concluded that all the discharges that hold at Hermann in the fluctuations of the river will, after a proper interval, hold at Saint Charles, with the following exceptions: short flushes on the low stages, and probably to some degree at the turning points of all rises and falls; also, the winter months, when ice action has generally destroyed the sequence of discharge.

Without assuming an answer for the Missouri River to the question of how the interval may vary at different stages between the time of the appearance of given discharges at Hermann and their appearance at Saint Charles, or of how much the sequence of discharge may be effected between two points, we may transfer the reasoning from discharge to gauge-heights, giving to the gauge-heights at which the same discharge passes, both Hermann and Saint Charles, the name of "equivalent gauge-heights." Bearing in mind that these equivalent gauge-heights mean an actual gauge-reading, which occurs at Hermann when a given discharge holds there, and a gauge-reading that will occur at Saint Charles in a short time when the discharge there has changed to the given value; or, in other words, that they simply represent two values, one on the Hermann gauge and one on the Saint Charles gauge, which stand for the same discharge in the discharge-gauge relation existing at Hermann and Saint Charles during that time.

The term, "discharge-gauge relation" is applied to the curve which gives the discharge of the river for all gauge-heights. It is gotten by plotting a series of measured discharges as abscissas to the gauge-heights at which they held, as ordinates, and passing a mean curve through the points so determined. It is known that there are often changes of this curve from year to year, and sometimes between different parts of the same year, as well as an erratic variation of discharge at the higher stages that is not understood.

The first step in the study of gauge data is a determination, from the actual records, of the relations connecting equivalent gauge-heights from point to point. The process is as follows, taking the former case of Hermann and Saint Charles: the first step necessary is the determination of about the interval to be used between a gauge-reading at Hermann and the occurrence of its equivalent at Saint Charles; a constant time interval has been used, and the possible error so introduced will be considered further on. An approximate value of this interval may be gotten from the hydrographs, viz, the interval between the occurrence of maximum and minimum points at the two places; beyond this approximation the method is at first mostly one of cut and try, though after having gotten the interval for a considerable distance, the interval in the same river will be found closely proportional to distance. Having gotten the interval, which in the case above is about one day, the Hermann gauge-readings are plotted as ordinates to the Saint Charles readings of one day later as abscissas, and the resulting mean line gives the graphic relation, its equation, the mathematical relation between the equivalent gauge-heights for these points. The result is called a "gauge relation."

Briefly considering the error that may be introduced into this relation by the use of a constant time interval, or by a small deviation from the true time interval, this error might be considerable if only one rising stage or one falling stage were plotted for the relation; but since not only both the rising and falling stages are plotted, but many of them for a single gauge relation, the mean line will largely eliminate the error. For, suppose a time interval between two points is either altogether too long, or too long for a given stage, then, as in the case above, on a rising river the Hermann gauge will be plotted to a Saint Charles gauge too large by the rise that took place at Saint Charles in the excess of interval. On a falling river it would be too small by the fall that took place in the excess of interval, and if the rise and fall were equally rapid, there would be no error in the mean from this source. The same holds for too small an interval with the changed signs. On the stationary river there is of course no error, and on slowly changing stages it is inappreciable. In fact, the only error from error in time interval that, if existing alone, would not be eliminated in an extended series of gauge records is the possible difference of interval between the rising and falling stages; this must be very slight, probably much within the error of the gauge readings themselves. Nevertheless, on account of complications to be mentioned, it is necessary to get the time interval as closely as possible.

In what has preceded, the gauge reading has simply stood for the discharge of the river at the time of that reading, and the equivalent gauge heights have stood for the same discharge at the two points. It therefore follows that all the erratic features of discharge-gauge variation will be reproduced in the gauge relation, except in so far as these erratic variations are exactly similar at the two points. It is important to enlarge on this latter exception. All that the gauge relation does is to give differences in the discharge-gauge relations. The gauge relations, from year to year, may slowly change their inclination, or from one rise to another, or rapidly during a portion of one rise; all we can say is that if one point, say Hermann, is unchangeable, at the other, say Saint Charles, the discharge-gauge relation has undergone the changes shown. It is only when this chain of relatives is connected with an absolute, that is, a series of discharge measurements that absolute conditions can be given. In years when there are no discharge measurements on the river that can be taken in the chain of gauge relations, the best that can be done is to take such points as have shown the most stability between other years and consider them as stable.

The case taken has been the simplest possible, since between these points, Hermann and Saint Charles, there are no tributaries to the main river. When, however, we consider a case such as the Boonville-Hermann gauge relation, it is complicated by the effect on the Hermann gauge of the contributions of the Osage and Gasconade rivers. If we knew the daily amount of this contribution its equivalent in gauge height at Hermann could be subtracted from the Hermann gauge reading, and we would then have a repetition of the Hermann-Saint Charles problem. In default of this knowledge, some knowledge of the general character of the tributaries, such as the periods when floods may be mostly expected, the probable duration of same, and an approximate estimate of their low-water discharge, will mostly enable us to identify the effect of their contributions on the gauge relation which includes them, and those portions shown free from their effect are used in determining the gauge relation between the points; though here the gauge relation, instead of representing equal discharges, represents at the lower point the discharge of the upper plus the low water tributary influence. As a side issue in this work the daily discharges of the tributaries are at least approximately valued.

The gauge relations having been determined between all points and for all years as accurately as possible, we may transfer discharge-gauge curves from points where they have been determined to other quite distant points, or by the use of the time intervals we may plot measured discharges to distant gauges; both ways are advisable as checks on each other, and all results must check with the measured discharges where they have been taken. In fact, the use of the gauge relations for the determination of discharge may disclose contradictions which necessitate their revision. This is to be expected, since in the first deduction the truth is clouded by tributary action, slow change in the discharge-gauge relation, and sudden erratic variation of discharge to gauge, and it is only when it has met the tests that we can feel satisfied that the right values have been assigned to these causes of divergence.

Finally, when the discharge-gauge curves have been established at the prominent points, the scaling off the discharge corresponding to the gauge reading for every day of the year is only a mechanical process.

The following is work that has been done in the line of study of the data:

PLOTTING AND STUDY OF GAUGE RELATIONS.

Hermann-Saint Charles, 1879 to 1882 and 1884.
 Cedar and Jefferson City-Hermann, 1878 to 1882.
 Boonville-Hermann, 1874 to 1879, and 1881 to 1882.
 Kansas City-Lexington, 1875 to 1884.
 Fort Leavenworth-Kansas City, 1875 to 1879.
 Leavenworth-Kansas City, 1881 to 1885.
 Atchison-Kansas City, 1880 to 1885.
 Atchison-Leavenworth, 1879 to 1885.

DISCHARGE-GAUGE RELATIONS.

The final curve at Saint Charles, from measurements of 1879, was determined; this curve was also transferred to Hermann by gauge relation, and discharges for each day from 1873 to 1879 were scaled from same, and mean monthly and yearly discharge, in cubic feet per second, made up.

The Kansas City measured discharges of 1883 and the Atchison measured discharges of 1882 were plotted to the Kansas City, Leavenworth, and Atchison gauges, but final curves have not yet been determined.

Very respectfully, your obedient servant,

JAMES A. SEDDON,
Assistant Engineer,

First Lieut. T. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission, Saint Louis, Mo.

APPENDIX A 5.

REPORT OF MR. A. H. BLAISDELL, ASSISTANT ENGINEER.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., July 27, 1886.

LIEUTENANT: I have the honor very respectfully to present the following report on the inspection of the Missouri river water-gauges made under your direction in May last.

On the 15th of the month, in company with Mr. James A. Seddon, I proceeded to Sioux City, Iowa, inspecting and testing each gauge in succession down the river as far as Hermann, and returned to this office on the 13th of June.

By your direction new wire-cable gauges were established on all the bridges of the river, located directly over the main channel. These give much more accurate record of the actual stage of the river than any gauge along the bank can give. A description and drawing of one of these gauges will be found at the end of this report.

A tabulated statement is also given, which shows, quite in detail, the results of the tests, heights of zeros above Saint Louis directrix, &c.

SIOUX CITY.

This is a vertical gauge of oak, spiked on a pile at the mouth of Perry Creek. It is well sheltered from injury by ice or drift, but its location is not a good one.

Perry Creek is a narrow stream and drains quite a large section of the city, and during rains is subject to sudden rises, at which times the reading on the gauge may possibly be greater by a foot than the actual height of water in the river.

I recommend that a new inclined gauge be established below the mouth of the creek.

H. E. O'Brien, a young clerk in a notion store, is the observer, and appears to be conscientious in the discharge of his duties.

OMAHA.

The only gauge found here was on a white-oak pile, graduated by nails driven into it, located at the mouth of an open sewer, about 700 feet above the bridge.

A wire gauge had previously been established on the bridge, but had been broken and not replaced.

As the standard form of wire-cable gauge adopted by you had not been received at the date of our inspection, we placed an annealed iron wire gauge on the bridge. We directed the observer, who had in his possession an extra gauge-rod, as soon as the standard gauge arrived to place it so as to read the same. This he has done, and the readings of the two gauges have since been uniform.

The observer is J. Pearson, bridge watchman, a rather loquacious but a careful and painstaking man.

The bridge is being entirely renewed, both super and sub structure, and will probably be finished in September, 1887. The bottom chord of the new bridge will be nearly 2 feet lower than that of the present one.

PLATTSMOUTH.

There are two vertical gauges here, nailed on piles, a short distance above the main street of the city—one established by the Signal Service and one belonging to this Commission. The latter reads only to 9' and leans badly in two directions, and readings on it had been discontinued since January 3, 1886, the Signal Service gauge being substituted.

The zeros on the two gauges are nearly the same—difference, 0.26 feet.

A standard wire-cable gauge was established on the high bridge, a mile below the city, and the readings are taken daily on both gauges.

The observer is H. B. Burgess, an Episcopal clergyman and Signal Service observer, or his son, either of whom is entirely trustworthy.

NEBRASKA CITY.

This is an inclined masonry gauge, built originally very substantially. It is located over half a mile below the city, alongside of the Railroad Transfer track, and under high clay bluffs.

Frequent land-slides occur here, especially in the spring, and during heavy rains the water washes away the earth tamping on each side of the gauge.

The gauge has not yet been made perceptibly inaccurate on account of these slides, but it must be carefully kept heavily riprapped and regularly repaired to prevent injury.

I would recommend that some expense should be gone into to drain the water from the bluffs away from the gauge.

Observer is T. K. Wooster, conductor of trains crossing the transfer-boats, a reliable man.

BROWNVILLE.

This is a vertical gauge, nailed to a pile at mouth of drain from high bluff. It is well protected from ice and drift, and records the higher stages of water quite accurately. It is not extended below a 14-foot reading on account of the shallowness of the water, and frequently the observer is obliged to dig a small channel through a narrow shore-bar to get water to the gauge. Below 14 feet he is obliged to use a temporary gauge, attached to a post on the edge of the bar and set from the other gauge by the water surface.

I can recommend no better site for the gauge, but would advise putting in a cheap inclined gauge at next low-water season.

Observer is W. H. White, a gunsmith, and a thoroughly reliable man.

WHITE CLOUD.

This is a vertical gauge, in two sections, of 10 feet each, graduated by directrix marks: a permanent high-water one, nailed to a strong pile of an old ferry landing, which the observer uses whenever he can, even by ditching through a small shore-bar, get water to it. He is frequently obliged to measure down to the water surface from the 426-foot mark. In low water he uses a temporary gauge, placed near the high-water one, attached to a post or pile and set by water surface.

I would recommend a new cheap inclined gauge to be placed here.

Observer George W. Westfall, manager of ferry-boat, &c., is a more than ordinarily careful and painstaking man.

SAINT JOSEPH.

This gauge, a vertical one, is placed in an angle of the pivot-pier of the bridge. It is well protected, but on account of its location its readings must necessarily be made more or less inaccurate from the obstruction the pier causes to the free passage of the water.

A standard wire-cable gauge has been placed on the bridge over the main channel and on the draw-span. Readings are continued from both gauges.

Observer W. H. R. Jackson, bridge-toll collector, is an intelligent and conscientious man.

ATCHISON.

This gauge is on the upper draw-rest of the bridge, and can only be reached by a boat. The current is very rapid and the eddying movement of the water is very noticeable. I do not think that it is possible for the observer to read the gauge as near as two-tenths, or perhaps more, for actual water surface.

A standard wire-cable gauge was put in on the draw-span over the main channel.

Both here and at Saint Joseph Mr. S. W. Fox, and his assistant, Mr. Meredith, put up the cable gauges.

Observer S. M. McCracken, bridge watchman, is satisfactory in discharge of his work.

LEAVENWORTH.

This is an inclined oak gauge, originally put up by the Signal Service. The graduations are chiseled in the wood. Eleven feet of the lower end has been broken off, and a temporary expedient was adopted by nailing a 2-inch graduated pine plank on a different slope to the gauge at its lower end, and even then another temporary gauge has to be used for stages below the $2\frac{1}{2}$ foot mark.

The gauge is in bad condition, not being "true" in any direction. The wood is rotted in several places, and the rains have washed gullies on each side of it.

Steamboats, in using it as a convenient hitching-post, have also contributed to its destruction. This being a very important gauge in the calculations on physical data should receive a thorough repair or perhaps entire renewal.

Observer Charles Dill, an ex-sergeant of Signal Service, is not entirely satisfactory.

FORT LEAVENWORTH.

At this point is one of the oldest gauges on the river, established under the direction of Col. W. E. Merrill, United States Engineers, in connection with the Mississippi River gauges in 1871.

It is in two sections: a high-water permanent-section bolted to the vertical rock and a very temporary section (inclined) for low water. The latter is in very bad repair, is kept up entirely by the observer with the few facilities he has at his disposal, and I would not regard it as very accurate.

The reports are sent regularly to the United States Engineer officer at Vicksburg.

The gauge was not tested by me.

By your direction a standard cable gauge was placed on the Leavenworth Bridge, about six miles above the city, over the steamboat channel, and graduated to directrix.

Observer Henry Mussett, bridge superintendent, appears to be entirely trustworthy.

KANSAS CITY.

This gauge is on the upper draw-rest of the bridge and was recently replaced. The rest is a great obstruction to the free passage of the water, causing "eddies and boils;" and the readings of the gauge do not give the true height of water surface.

A standard cable gauge was placed on the draw-span over the channel, and readings are continued from both gauges.

Observer F. D. Smith is well recommended as a careful man. His occupation is bridge agent.

LEXINGTON.

The gauges here were not in a very satisfactory condition. A high-water gauge was found at foot of the main street, leading to the river, fastened on the face of a rock culvert, which spans a creek, graduated from 6 feet to 22 feet.

In front of the gauge, extending out about 75 feet, is a shore bar. From its location I do not think any careful calculations ought to be based on this gauge-reading.

Over half a mile below, near the ferry landing, is the low-water sloping gauge of 2-inch plank on edge, which can only be called temporary, as it is liable to be destroyed by drift. It is graduated from 8 feet to 2 feet *above* low water.

These two gauges were established from different bench-marks, and in running two careful lines of levels between the benches we found a discrepancy in the published elevations of $+0'.148$ in B. M. No. 189.

Deeming it impossible to correlate the readings of these two gauges, we established a sloping gauge for high water, located 100' above the low-water one, graduated from 5 feet upwards.

It consists of 6' $\times$ 6" white pine timber set on 6' $\times$ 8" posts, firmly sunk; earth well tamped and moderately well riprapped with stone. It has the same zero as the low-water gauge, and its readings have been satisfactory.

The new gauge, although cheaply made, I esteem a very good one; it will require, however, attention to prevent the surface water from undermining it, and this the regular observer can readily do.

I would recommend that this gauge be either extended to low-water mark or an entire new one be made (the latter preferable).

Observer Newton Gibson, omnibus driver, is an unusually intelligent man.

WAVERLY.

This is a very well built inclined masonry gauge, and is correct within the limits of accuracy of reading. The iron bar on the wooden beam is somewhat uneven, probably due to expansion, but not sufficiently so to need repair. The location, although somewhat inconvenient of access, could not be improved.

Observer B. H. Thomas, a dry-goods merchant, is fairly efficient.

DE WITT.

This is also a masonry inclined gauge, in good order, but unfortunately located at the present time, as a narrow shore-bar is formed in front of it, necessitating frequent ditching to get the water to the gauge.

In lower stages of water a temporary gauge, nailed to a post or log, has to be resorted to.

Observer J. N. Carson, railroad station agent, appears to be a careful man.

GLASGOW.

This was found to be a counterbalanced iron-wire gauge on the north side of the river and on the first deck-span approached from the south. The gauge wire is No. 10, B. W. G., and a weight of thirty pounds was attached to it. It was found reasonably correct, but its location is such that during the lower stages of water the bar becomes entirely dry underneath it.

The gauge is far from the main channel, and the only reason for placing it there could have been to keep the counterpoise or gauge-weight out of the way of passing steamboats.

In low water the observer adopted the expedient of lowering a weight from a sheave on the top chord of the bridge.

A standard wire-cable gauge was placed over the main channel, and showed a difference of .033 in height of water surface from that given by the old gauge.

Observer Aris B. Sherwood, bridge attendant, is entirely satisfactory.

BOONVILLE.

This gauge, although found to be in very good order, and nearly correct as regards its zero, is open to the same objections which obtains to all gauges which are attached to draw-rests or any other obstruction to the free passage of water.

A standard cable gauge was established over the main channel on the draw-span of the bridge, and readings on both gauges ordered to be continued, in order to note the probable error of the vertical gauge.

Observer C. Randecker, watchman on the bridge, is fairly competent.

JEFFERSON CITY.

The gauges here are not very satisfactory. The high-water gauge is on the face of a railroad culvert, spanning a good-sized creek, and its readings, when the creek is high, cannot give the true height of water in the river. The low-water gauge is a temporary sloping one, located about 1,800 feet above. It has served its purpose very well and probably will remain until next winter, but no absolute connection between the two gauges can be made at different stages of water.

It is recommended that a new inclined gauge be placed in the locality of the low-water one at an early day.

Observer D. W. Rogers, collector on ferry-boat, appears to be a very conscientious man.

HERMANN.

This is a Signal Service gauge, receiving no attention except that given it by its observer, Mr. Maushund. It is made of 2-inch plank on edge, and nailed to small posts. It is quite well-protected by large rocks, or it would have been swept out by ice or drift. The lower end has been repeatedly broken off and been replaced by the observer. As this gauge has proven of benefit in investigation of physical data, it is recommended that a permanent inclined gauge be established here.

SAINT CHARLES.

This was the first standard wire-cable gauge established by your order on the Missouri River bridges. It was not inspected, but the observer, J. S. Hill, bridge watchman, a very careful and intelligent man, reports that he has kept a mark on the guard-rail of the bridge which would show any variation in the length of the cable, and that no appreciable difference can be observed since the gauge was put up in March.

DESCRIPTION OF STANDARD WIRE-CABLE-BRIDGE GAUGE.

This is a very simple gauge, as the sketch herewith shows, and probably the most reliable of all the gauges on the river.

The component parts are a deeply grooved iron sheave with a lag screw and washers to fasten it to a stringer, guard-rail end of tie, or any convenient timber; a sufficient length of best Swedish iron wire sash cable of $\frac{1}{8}$ inch diameter, running over the sheave, to one end of which is fastened a weight varying with the length of the cord, generally a window-sash weight of 14 to 16 pounds, and to the other end is attached an iron handle with an index cross-piece and a turnbuckle and lock-nut for taking up any stretch that may ensue from long use of the gauge. Next is a properly graduated gauge-rod fastened horizontally to the same stringer or guard-rail that the sheave is attached to, with its zero properly placed. In making an observation the observer simply lowers the weight until it touches the water and takes his reading.

The contact with the water surface can be made quite accurately, especially if the sun casts a shadow from the weight.

After the reading is taken the observer walks back with the entire line and weight until the latter is sufficiently high to be out of the way of passing steamboats or until it is up to the bottom chord of the bridge and secures the handle to a spike or staple and locks it thereto, if he deems it necessary.

It was at first thought that the size of the cable ($\frac{1}{8}$ -inch) would present too great a wind surface, but it has been found that, even in quite heavy winds, it does not become enough curved to vitiate an observation.

It is also found that the cable, while it is much stronger and more durable than iron or other wire, does not stretch, except to a very small extent, under the continued strain of a heavy weight.

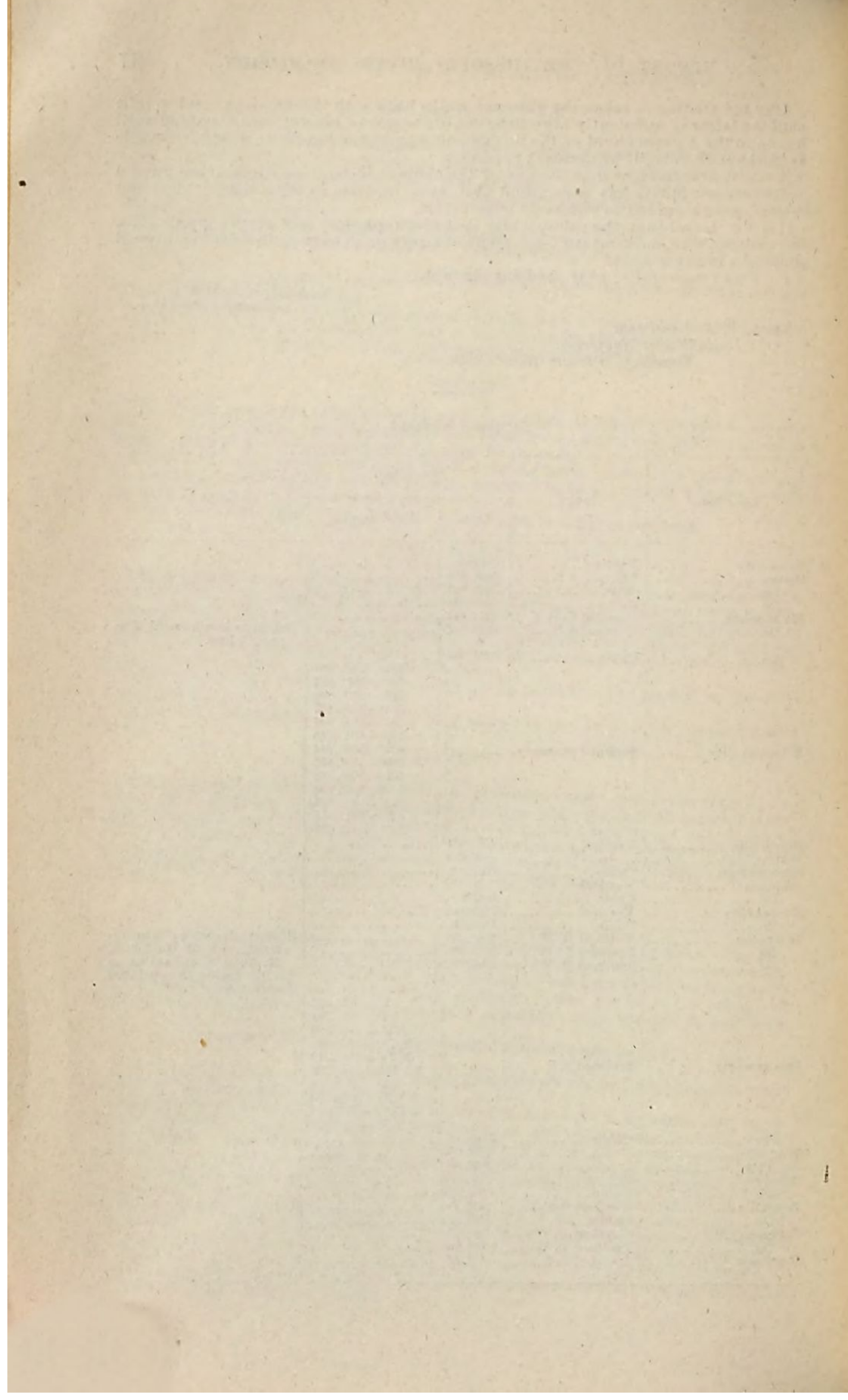
Very respectfully, your obedient servant,

A. H. BLAISDELL,
Assistant Engineer.

Lieut. T. A. BINGHAM,
United States Engineers,
Secretary Missouri River Commission.

Tabular statement.

Location.	Gauge.	Elevation.		Remarks.
		Zero.	Foot marks.	
Sioux City.....	Vertical.....	Datum..		Readings commenced January 3, 1886.
Omaha.....	Pile.....	544'. 804	.....	
Do.....	Wire.....	544'. 804	.....	
Do.....	Cable.....	544'. 804	.....	
Plattsmouth.....	Vertical U. S. E....	527'. 948	.....	
Do.....	Vertical S. S.....	528'. 212	.....	
Do.....	Cable.....	525'. 892	.....	
			501'=500'. 863	
			502'=501'. 862	
			503'=502'. 860	
			504'=503'. 852	
			505'=504'. 837	
			506'=505'. 845	
Nebraska City.....	Inclined masonry.....		507'=506'. 844	These elevations are referred to B. M. No. 190, B. M. No. 189 appears to be 0'.148 higher than printed elevation.
			508'=507'. 855	
			509'=508'. 862	
			510'=509'. 868	
			511'=510'. 886	
			512'=511'. 916	
			513'=512'. 942	
Brownville.....	Vertical.....	457'. 496	.....	
White Cloud.....	do.....	+0'. 027	.....	
Saint Joseph.....	Cable.....	Datum..	.....	
Atchison.....	Vertical.....	+0'. 030		
Do.....	Cable.....	Datum..	.....	
Kansas City.....	Vertical.....	Datum..	.....	
Do.....	Cable.....	Datum..	.....	
Lexington.....	Vertical H. W.....	254'. 581	.....	
Do.....	Inclined L. W.....	254'. 824	.....	
Do.....	Inclined H. W.....	254'. 820	.....	
			X'=338'. 387	
			XI'=339'. 391	
			XII'=340'. 390	
			XIV'=342'. 361	
			XVI'=344'. 315	
Leavenworth.....	Inclined S. S.....		XVIII'=346'. 293	
			XX'=348'. 318	
			XXII'=350'. 323	
			XXIV'=352'. 323	
			XXV'=353'. 319	
Do.....	Cable.....	Datum..	.....	
Waverly.....	.....	229'. 013	.....	
De Witt.....	.....	201'. 308	.....	
Glasgow.....	Old wire.....	82'. 383	.....	
Do.....	Cable.....	82'. 350	.....	
Boonville.....	Vertical (new)....	153'. 164		
Do.....	Cable.....	153'. 274	.....	
Jefferson City.....	Vertical H. W.....	30'. 75		
Do.....	Inclined L. W.....	30'. 76		
Hermann.....	Inclined S. S.....	70'. 80		



APPENDIX A6.

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STAGES OF THE MISSOURI RIVER, FROM ST. CHARLES, MO., TO
FT. PIERRE, DAK., COMPILED FROM MISCELLANEOUS AND
REGULAR GAUGE RECORDS, BETWEEN 1872 AND 1885.

APPENDIX

STAGES OF THE MISSOURI RIVER FROM ST. LOUIS TO
THE MOUTH OF THE RIVER AT THE GREAT PLAINS
AND THE MOUNTAINS OF THE WEST

GENERAL NOTES TO GAUGE HISTORIES.

GENERAL NOTES TO GAUGE HISTORIES

GENERAL NOTES TO GAUGE HISTORIES.

It was discovered in March, 1886, that P. B. M. 12 of the Mississippi River Commission, at the mouth of the Missouri River, on which depended all the U. S. elevations previously published, had not been finally determined at the date of said publication. Hence, the figures of the following *tabulation* must be increased by 0'.341 (the correction as at present [June 1886] determined) in order to give the elevation of water surface at the points named, referred to the St. Louis Directrix. The St. Louis Directrix is 433'.97 above the Cairo Datum, and 412'.71 above the present determination (1884) of mean gulf tide at Biloxi, Mississippi.

The elevations of water surface given in the gauge tabulations are deduced from readings taken on Signal Service, bridge and Missouri River U. S. E. gauges, reported to the St. Louis office, as stated in their respective histories.

The elevations from Missouri River U. S. E. gauge readings are from the mean of a 6 a. m. and 6 p. m. daily reading. Those from Signal Service gauge readings are from a single reading taken at 3 p. m. daily, prior to November 1, 1879, and at 1 p. m. from that date on. Those from bridge records, where known, will be specially stated.

The gauges are divided into Miscellaneous and Regular, and in each division the gauge is named in the order in which it comes on the river from the mouth up. The Regular gauges are at those points where gauges have been read for a number of years and at most of which they are read at present. The Miscellaneous are at those points where readings have been taken only for a short time, principally during the progress of a survey.

In the *histories*, all elevations referred to the St. Louis Directrix are to be increased by 0'.341; and all limiting dates are both inclusive.

MISCELLANEOUS GAUGE HISTORIES.

MISCELLANEOUS CHANGE HISTORIES

MISCELLANEOUS GAUGE HISTORIES.

JAMESTOWN LANDING, MO.

From August 22d, 1878 to August 30th, 1879. Elevation of gauge zero is — 12'.98. Location at Jamestown Landing.

Reference B. M. is U. S. E. of Mo. River Survey No. 7, described as "B. M. 79 of 1879, on 2'.5 cottonwood on lower side of ravine at Jamestown Landing." Elevation 17'.644.

COTTLEVILLE, MO.

From August 21st, 1878 to August 30th, 1879. Elevation of gauge zero is 21'.25. Location about $\frac{1}{2}$ mile above Cottleville Landing.

No B. M. nearer than about 20 miles.

WASHINGTON, MO.

From August 21st, 1878 to August 30th, 1879. Elevation of gauge zero is 41'.53. Location a short distance below ferry landing.

Reference B. M. is U. S. E. B. M. of Mo. River Survey between Nos. 42-43, described as "B. M. 74 of 1879; northwest corner water table of a three story brick on southeast corner of Water and Elm sts., Washington." Elevation 82'.287.

FISHER'S LANDING, MO.

From August 19th, 1878 to August 30th, 1879. Elevation of gauge zero is 85'.72. Location at Fisher's Landing.

No B. M. nearer than about 20 miles.

PROVIDENCE, MO.

From August 16th, 1878 to August 31st, 1879. Elevation of gauge zero is 130'.95. Location just below Providence.

Reference B. M. is described as "Gauge B. M. projection of foundation of Tuttle & Conley's store." Elevation 167'.12.

This elevation is not considered very accurately determined, but is given as the only link to the gauge that is available.

NEW FRANKFORT, MO.

From August 14th, 1878 to August 31st, 1879. Elevation of gauge zero is 186'.27. Location about 1 mile above New Frankfort.

No B. M. nearer than about 15 miles.

MIAMI, MO.

From August 13th, 1878 to August 30th, 1879. Elevation of gauge zero is 210'.43. Location not definitely known.

Reference B. M. is U. S. E. B. M. of Mo. River Survey between Nos. 154-155, described as "B. M. C. of 1878—a knob chiseled on top of rock in front of Smith & Boyer's two story brick warehouse, Miami." Elevation 231'.881.

CAMDEN, MO.

1. From August 10th, 1878 to January 30th, 1879. Elevation of gauge zero is 264'.1. Location near dump of second coal mine.

2. From February 9th, 1879 to August 30th, 1879. Elevation of gauge zero is 266'.4.* Location same as 1.

Reference B. M. is U. S. E. B. M. of Mo. River Survey between Nos. 201-202, described as "B. M. 42 of 1878—on extreme northeast corner of top of bridge seat, west abutment of above bridge." Elevation 284'.969.

MISSOURI CITY, MO.

From August 9th, 1878 to August 30th, 1879. Elevation of gauge zero is 282'.79. Location near railroad dike, near grist mill.

Reference B. M. is U. S. E. B. M. of Mo. River Survey between Nos. 220-221, described as "B. M. 36 of 1878—top of foundation at southwest corner of a three story frame grist mill near depot, Missouri City. Bench marked with a cross (+)." Elevation 304'.103.

BLAIR, NEB.

From October 11th, 1880 to July 30th, 1881. Elevation of gauge zero is 572'.34. Location at old transfer landing.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 438, described as "on 1'.3 willow, 120' towards river from S. C. & P. railroad, about $\frac{1}{2}$ mile above Transfer Landing at Blair, Neb." Elevation 593'.455.

2. U. S. E. B. M. of Mo. River Survey between Nos. 438-439, described as "Gauge B. M—on 1'.7 willow, 50' towards railroad from Bench 438." Elevation 593'.747.

DECATUR, NEB.

From September 15th, 1880 to November 26th, 1881. Elevation of gauge zero is 620'.37. Location near mouth of Elm creek.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 456, described as "on 3' cottonwood 150' from river, 100' north of Elm Creek, just below Decatur." Elevation 640'.565.

*NOTE.—This elevation of zero was arrived at from examination of hydrographs and is in consequence only approximately correct.

2. U. S. E. B. M. of Mo. River Survey between Nos. 456-457, described as "Gauge B. M.—on 6 inch willow, 120' west from Bench 456." Elevation 638'.010.

RUNNING WATER, D. T.

From September 15th, 1881 to November 30th, 1881. Elevation of gauge zero is 786'.39. Location at Running Water.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 525, described as "On 1'.2 elm on bluff side, in ravine, 150' above ferry landing at Running Water." Elevation 820'.418.

FORT RANDALL, D. T.

1. From September 2d, 1881 to November 26th, 1881. Elevation of gauge zero is 820'.05. Location at Fort Randall.

2. From August 31st, 1882 to December 2d, 1882. Elevation of gauge zero is 819'.44. Location same as 1.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey between Nos. 548-549, described as "B. M. A.—cross (+) cut into top of foundation at southwest corner of south wing of stone building used as Christ Church." Elevation 886'.150.

2. U. S. E. B. M. of Mo. River Survey between Nos. 549-550, described as "Gauge B. M.—nail in cottonwood on bank above gauge at Fort Randall." Elevation 842'.405.

BIJOU HILLS, D. T.

From September 2d, 1882 to November 30th, 1882. Elevation of gauge zero is 869'.58. Location at Bijou Hills.

Reference B. M. is U. S. E. B. M. of Mo. River Survey, described as "Gauge B. M. on 12'' cottonwood, about 100' back from gauge." Elevation 883'.314.

CHAMBERLAIN, D. T.

From September 3d, 1882 to November 30th, 1882. Elevation of gauge zero is 911'.35. Location at Chamberlain.

Reference B. M. is U. S. E. B. M. of Mo. River Survey, described as "Gauge B. M. 2—on 2'.5 Elm, 300' from river, 300' from railroad at Chamberlain." Elevation 932'.853.

FORT PIERRE, D. T.

From September 6th, 1882 to November 30th, 1882. Elevation of gauge zero is 1000'.40. Location at Mouth of Bad River.

Reference B. M. is U. S. E. B. M. of Mo. River Survey, described as "Nail on 18'' cottonwood, 50' west of house of G. P. Waldron, 20' north of north line of Main street in Fort Pierre, and 165' east of east line of Deadwood street, 500' from river." Elevation 1014'.916.

Date of closing Missouri River by ice and opening of same from 1873 to 1886.

Winter of—	Date at which river closed.	Date when river opened.	Remarks.
1873-'74	.....	.....	All that is known is river was closed during January at Leavenworth, 30 miles above Kansas City.
1874-'75	Jan. 4, 1874	Mar. 18, 1875	At Leavenworth.
1875-'76	Nov. 23, 1875	Dec. 2, 1875	} At Leavenworth. River open from December 2 to January 31.
	Jan. 31, 1876	Feb. 9, 1876	
1876-'77	Dec. 20, 1876	Mar. 2, 1877	At Leavenworth.
1877-'78	Jan. 1, 1878	Feb. 3, 1878	At Kansas City.
1878-'79	Dec. 17, 1878	Feb. 10, 1879	At Leavenworth.
1879-'80	Dec. 15, 1879	Jan. 4, 1880	At Kansas City.
1880-'81	Nov. 24, 1880	Dec. 8, 1880	} At Kansas City. River open from December 8 to December 29.
1881-'82	Dec. 29, 1880	Feb. 22, 1881	
18 2-'83	Dec. 29, 1881	Feb. 20, 1882	At Kansas City.
	Dec. 4, 1882	.....	} At Kansas City. Date at which river opened between December 4 and January 3 not known.
1883-'84	Jan. 3, 1883	Feb. 15, 1883	
1884-'85	Dec. 19, 1883	Feb. 25, 1884	At Kansas City.
	Dec. 14, 1884	Feb. 6, 1885	Date of closing is at Lexington, 65 miles below Kansas City; date of opening is at Kansas City.
1885-'86	Dec. 11, 1885	Dec. 23, 1885	} At Kansas City river open from December 23 to January 7.
	Jan. 7, 1886	Feb. 14, 1886	

REGULAR GAUGE HISTORIES.

H. Ex. 28—6

81

REGULAR GAUGE HISTORIES.

REGULAR GAUGE HISTORIES.

ST. CHARLES, MO.

Missouri River U. S. E. Gauges.

1. From August 22d, 1878 to April 2d, 1879. Elevation of gauge zero is 2'.47. Location at St. Charles Bridge.

2. From April 3d, 1879 to February 24th, 1881. *Elevation of gauge zero is — 60'.816. †Location foot of Decatur street, about half mile above bridge.

3. From February 25th, 1881 to September 30th, 1882. Elevation of gauge zero is — 60'.816. Location same as 1.

4. From October 1st, 1882 to date. Elevation of gauge zero is 0'.00. Location same as 1.

Reference B. M. is B. M. on pier 1, known as "Bridge B. M." Elevation 28'.391.

HERMANN, MO.

Signal Service Gauges.

1. From April 24th, 1873 to July 31st, 1881. Elevation of gauge zero is 71'.91. Location about 300' above ferry landing.

2. From August 1st, 1881 to date. Elevation of gauge zero is 66'.91. Location same as 1.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 59, described as "Horizontal furrow in head of copper bolt leaded into rock at end of railroad cut entering Hermann, Mo., from above." Elevation 103'.202.

JEFFERSON CITY AND CEDAR CITY, MO.

Missouri River U. S. E. Gauges.

1. From August 18th, 1878 to August 30th, 1879. Elevation of gauge zero is 110'.35. Location on Jefferson City side of river, place not definitely known; probably near passenger depot.

* NOTE.—This zero is on bridge datum, which is 100'.00 below high water of 1844.

† NOTE.—The elevations of water surface given are elevations at bridge, and were deduced from the reported readings in the following way: Fall from gauge 2 to the bridge is $0'.006R + 0'.036$, where R is reading on gauge. Hence, elevation at bridge is $R - 0'.006R - 0'.036 - 60'.816$, or, equals $R - [0'.006R + 60'.85.]$

2. From August 12th, 1880 to October 14th, 1882. Elevation of gauge zero is 33'.24. Location on Cedar City side of river at mouth of Cedar Creek.

3. From October 15th, 1882 to date. †Elevation of gauge zero is 30'.75. §Location on Jefferson City side of river in front of pork house.

The elevations of water surface given in the tabulation are the elevations at the location of each gauge during the time that gauge was read.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 90, described as "Horizontal furrow in head of copper bolt leaded into rock of riverward cut, face of Capitol Hill." Elevation 143'.236.

BOONVILLE, MO.

Signal Service Gauges.

1. From November 16th, 1873 to July 7th, 1875. Elevation of gauge zero is 150'.89. Location not known.

2. From July 8th, 1875 to August 14th, 1878, and from September 1st, 1879 to August 10th, 1881. Elevation of gauge zero is 153'.18. Location at Boonville Bridge.

3. From August 11th, 1881 to July 7th, 1883. Elevation of gauge zero is 153'.43. Location same as 2.

Missouri River U. S. E. Gauges.

1. From August 15th, 1878 to August 31st, 1879. Elevation of gauge zero 153'.18. Location at Boonville Bridge.

2. From January 7th, 1884 to date. *Elevation of gauge zero is 153'.28. Location same as 1.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey between Nos. 120-121, described as "B. M. 63 of 1878—on top of stone on west side of Main street between levee and alley, marking high water of 1844." Elevation 184'.853. High water of 1844 is 0'.353 below this B. M.

2. U. S. E. B. M. of Mo. River Survey No. 121, described as "Horizontal furrow in head of copper bolt leaded into face of south abutment of M. K. & T. railroad bridge." Elevation 172'.688.

GLASGOW, MO.

Missouri River U. S. E. Gauges.

1. From August 13th, 1878 to date. ||Elevation of gauge zero is 82'.35. Location at C. & A. railroad bridge.

† NOTE.—These readings were reported already reduced to elevations above the St. Louis Directrix.

§ NOTE.—This gauge is read at two places, the high water readings, or readings from 66'.50 up, being taken on culvert about 1500' below gauge in front of pork house.

* NOTE.—These readings were reported to the St. Louis office already reduced to elevations above the St. Louis Directrix.

|| NOTE.—From October 1st, 1882 to date, these readings were reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 141, described as "On upper point of cutwater 4th pier (counting from east shore) of Glasgow bridge." Elevation 199'.101.

2. Described as "Bridge B. M. on ridge between pillars of pier 1 (from east bank.)" Elevation 199'.824.

DEWITT, MO.

Missouri River U. S. E. Gauges.

1. From January 6th, 1883 to date. *Elevation of gauge zero is 201'.33. Location about 100' above Wabash depot.

Reference B. Ms. are: 1. Described as "On 15'' sycamore, on right bank of run, south of Wabash depot, about 100' west from railroad trestle." Elevation 233'.283.

2. Described as "On 20'' wild locust, 300' west from depot, 75' south of main road leading from depot to town." Elevation 234'.395.

WAVERLY, MO.

Missouri River U. S. E. Gauges.

1. From August 13th, 1878 to August 31st, 1879. Elevation of gauge zero is 231'.91. Location not definitely known; probably about 3000' below gauge 2.

2. From January 1st, 1883 to date. *Elevation of gauge zero is 229'.00. Location about 100' above old brick foundry.

The elevations of water surface given in the tabulation are the elevations at the location of each gauge during the time that gauge was read.

Reference B. M. is described as "B. M. on small round topped 15'' black oak, at foot of bluff, about 2500' above gauge, and 500' above lower edge of first timber above Waverly." Elevation 258'.260.

LEXINGTON, MO.

Signal Service Gauges.

1. From April 28th, 1873 to August 11th, 1878, and from September 1st, 1879 to August 16th, 1880. †Elevation of gauge zero is 253' 30. Location not definitely known; probably about 500' above foot of Pine street.

* NOTE.—These readings were reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

† NOTE.—The Signal Service readings are in error at the commencement of the U. S. E. gauge records, August 12th, 1878. A comparison of records shows that this is a decreasing error from about 1'.3 too great an elevation at the beginning of the U. S. E. records to nothing after about four weeks. Prior to August 12th, 1878, there are no direct data bearing on how much this error is, or how far back it extends. Therefore, in the tabulation taken prior to this date from Signal Service readings, this error is left for adjustment according to the personal views of those making use of this data.

Missouri River U. S. E. Gauges.

1. From August 12th, 1878 to August 31st, 1879. Elevation of gauge zero is 253'.30. Location not definitely known ; probably about 500' above foot of Pine street.

2. From August 17th, 1880 to September 18th, 1880. Elevation of gauge zero is 258'.20. Location foot of Pine street.

3. From September 19th, 1880 to February 17th, 1883. Elevation of gauge zero is 253'.30. Location same as 2.

4. From February 18th, 1883 to date. *Elevation of gauge zero is 254'.60. Location to November 19th, 1883, same as 2. From November 20th, 1883 to date 1500' below 2.

The elevations of water surface given in the tabulation are the elevations at the location of each gauge at the time that gauge was read.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 190, described as "Horizontal furrow in head of copper bolt leaded into rock in point of bluff on upper side of Rock Road at ferry landing." Elevation 306'.238.

2. U. S. E. B. M. of Mo. River Survey between Nos. 190-191, described as "B. M. 48 of 1878—northwest corner door sill, main entrance to Lexington City Mills, 3½ story brick." Elevation 280'.800.

KANSAS CITY, MO.

Signal Service Gauge.

From April 21st, 1873 to August 30th, 1878. †Elevation of gauge zero is approximately 303'.7. Location on levee foot of Delaware street.

Missouri River U. S. E. Gauges.

1. From August 31st, 1878 to January 4th, 1879. †Elevation of gauge zero is approximately 303'.7. Location on levee at foot of Delaware street.

2. From January 5th, 1879 to October 4th, a.m., 1879. Elevation of gauge zero is 303'.30. Location at bridge.

* NOTE.—From March 4th, 1883 to date, these readings were reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

† NOTE.—The elevation of this zero is not exactly known and was not used in the reductions given in the tabulation. The tabulation gives the elevations of water surface at bridge gauge, and hence is equal to the reading on Signal Service gauge + the elevation of its zero + the fall from Bridge gauge to Signal Service gauge.

The combined value of the last two elements was deduced by plotting as ordinates and abscissas the elevations of water surface on Bridge gauge and the readings on Signal Service gauge, from September 1st, 1879 to November 15th, 1881. This combined value was found equal to 303'.8 — 0'.02R (where R is Signal Service gauge reading) from which we have the equation: Elevation of water surface at Bridge = R + 303'.08 — 0'.02R.

By this equation Signal Service gauge readings were reduced.

† NOTE.—Same as note to Signal Service gauge.

3. From October 4th, p.m., 1879 to February 3d, 1883. *Elevation of gauge zero is 303'.22. Location same as 2.

4. From February 4th, 1883 to date. †Elevation of gauge zero is 300'.00. Location same as 2.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 243, described as "Horizontal furrow in head of copper bolt leaded into north face, near east end, of south abutment of Kansas City bridge." Elevation 341'.394.

2. U. S. E. B. M. of Mo. River Survey No. 244, described as "B. M. 24½ of 1878—point of arrow head engraved on south side of first pier north of south abutment of Kansas City bridge, and marked (erroneously) High Water of 1844." Elevation 340'.862.

3. U. S. E. B. M. of Mo. River Survey No. 245, described as "B. M. 23 of 1878—cross (+) cut into top of foundation at northwest corner of Union Elevator." Elevation 332'.329.

LEAVENWORTH, KAS.

Signal Service Gauges.

1. From May 18th, 1873 to January 4th, 1875. Elevation of gauge zero is 333'.34. Location not known.

2. From March 15th, 1875 to August 31st, 1878, and from September 1st, 1879 to September 4th, 1880. †Elevation of gauge zero is 327'.84. Location not definitely known; probably on levee near foot of Delaware street.

Missouri River U. S. E. Gauges.

1. From September 1st, 1878 to August 31st, 1879. Elevation of gauge zero is 327'.84. Location not definitely known; probably on levee near foot of Delaware street.

2. From September 5th, 1880 to date. §Elevation of gauge zero is 327'.84. Location on levee foot of Delaware street.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 270, described as "Cross (+) cut into top of water-table under riverward foot of arch forming main entrance to Union Depot." Elevation 355'.522.

* NOTE.—From October 1st, 1882 to date, these readings were reported to the St. Louis office already reduced to elevations above the St. Louis Directrix.

† NOTE.—See note to 3.

‡ NOTE.—These readings were reported to the St. Louis office reduced to elevations above the datum assumed at Sioux City for Missouri River Survey of 1881. The elevation of this datum is -322'.62.

§ NOTE.—From November 6th, 1881 to September 23d, 1882, these readings were reported to the St. Louis office reduced to elevations above the datum assumed at Sioux City for Mo. River Survey of 1881. Elevation of this datum is -322'.62. And from September 24th, 1882 to date the readings were reported reduced to elevations above the St. Louis Directrix.

2. U. S. E. B. M. of Mo. River Survey between Nos. 270-271, described as "B. M. 5 of 1878—top of water-table at northeast corner of Union Depot." Elevation 355'.529.

FORT LEAVENWORTH, KAS.

U. S. E. Gauges.

1. From January 1st, 1872 to December 21st, 1872. *Elevation of gauge zero is 332'.61. Location near pump house.

2. From December 22d, 1872 to November 13th, 1881. †Elevation of gauge zero is 329'.72. Location near pump house.

The elevations from these gauge readings are from a single reading taken at 8 a. m. daily.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 272, described as "B. M. 1 of 1878—cross (+) cut into top of second course of masonry at southeast corner of 3-story stone storehouse." Elevation 357'.796.

ATCHISON, KAS.

Missouri River U. S. E. Gauges.

1. From September 5th, 1878 to October 27th, 1879. †Elevation of gauge zero is 353'.31. Location at bridge.

2. From February 17th, 1880 to February 25th, 1882. *§Elevation of gauge zero is 352'.81. Location same as 1.

3. From February 26th, 1882 to November 3d, 1883. ||Elevation of gauge zero is 352'.76. Location same as 1.

4. From November 4th, 1883 to date. Elevation of gauge zero is 0'.00. Location same as 1.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey No. 289, described as "Cross (+) cut into top of bevel near base of pilaster on southeast corner of Union Depot." Elevation 384'.203.

2. U. S. E. B. M. of Mo. River Survey between Nos. 289-290, described as "B. M. 38 of 1879—on projecting course of three bricks, southeast corner 2-story brick, General offices A. & N. Railroad, on northwest corner of Commercial and First sts." Elevation 384'.323.

3. U. S. E. B. M. of Mo. River Survey No. 290, described as "B. M. 37 of 1879—top of foundation course at northeast corner Atchison

* NOTE.—See note to 2.

† All the Fort Leavenworth readings were reported to the St. Louis office reduced to approximately the datum assumed at Sioux City for Missouri River Survey of 1881. The elevation of the datum to which they were reduced is —322'.73.

‡ NOTE.—These readings were reported to the St. Louis office reduced to elevations above a datum —324'.69.

§ NOTE.—These readings to October 10th, 1880 were reported to the St. Louis office reduced to elevations above a datum —324'.69.

|| NOTE.—From February 26th, 1882 to September 30th, 1882, these readings were reported to the St. Louis office reduced to elevations above datum —322'.80, and from October 1st, 1882 to November 3d, 1883, reduced to elevations above datum —0'.14.

& Nebraska Passenger Depot, 50' south of southwest corner Commercial and First Sts." Elevation 380'.559.

ST. JOSEPH, MO.

Bridge Gauge Records.

From June 19th, 1872 to August 31st, 1878. Elevation of gauge zero is 300'.32. Location at bridge.

The elevations from bridge gauge records are from a single reading taken at 3 p. m. daily.

Missouri River U. S. E. Gauges.

1. From September 1st, 1878 to September 23d, 1882. *Elevation of gauge zero is 380'.32. Location at bridge.

2. From September 24th, 1882 to date. †Elevation of gauge zero is 0'.00. Location same as 1.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 313, described as "B. M. 34 of 1879—cross (+) cut into northeast corner of foundation on west side of arched entrance (facing the north) of Henry Krug's packing house, on southwest corner of Fourth st. and railroad." Elevation 410'.290.

WHITE CLOUD, KAS.

Missouri River U. S. E. Gauges.

1. From April 9th, 1881 to August 28th, 1881. Elevation of gauge zero is 416'.12. Location 150' above railroad depot.

2. From August 29th, 1881 to September 30th, 1882. Elevation of gauge zero is 416'.32. Location 350' above 1.

3. From October 1st, 1882 to date. Elevation of gauge zero is 0'.00. Location same as 2.

The elevations of water surface given in the tabulation are the elevations at the location of each gauge during the time that gauge was read.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 346, described as "B. M. 21 of 1879—east corner of door-sill of small door east of main entrance to 2-story brick livery stable, 75' west of southwest corner Main and Water sts., south side Main street." Elevation 457'.023.

BROWNVILLE, NEB.

Missouri River U. S. E. Gauges.

From Aug. 23d, 1880 to date. ‡Elevation of gauge zero is 457'.59. Location near foot of levee.

* NOTE.—From January 1st, 1882 to September 23d, 1882, these readings were reported to the St. Louis office reduced to elevations above datum 300'.32.

† NOTE.—These readings were taken on various temporary gauges with arbitrary zeros frequently changed, and reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

‡ NOTE.—From October 1st, 1882 to date these readings were reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 383, described as "B. M. 14 of 1879—on 2'.5 cottonwood northwest corner Main st. and levee, on curb line, 30' north of north line of Main st." Elevation 496'.802.

NEBRASKA CITY, NEB.

Missouri River U. S. E. Gauges.

1. From August 1st, 1878 to September 30th, 1882. Elevation of gauge zero is 493'.22. Location near transfer landing, about $\frac{1}{2}$ mile below depot.

2. From October 1st, 1882 to date. *Elevation of gauge zero is 0'.00. Location same as 1.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 398, described as "B. M. 11 of 1879; datum of construction party 100'.000 below it; top of water-table at southwest corner of office of Registered Distillery No. 2, State of Nebraska, at foot of Main street." Elevation 531'.138.

PLATTSMOUTH, NEB.

Signal Service Gauge.

From April 19th, 1873 to November 23d, 1880. Elevation of gauge zero is 527'.85. Location near foot of Main street.

Missouri River U. S. E. Gauge.

From March 10th, 1881 to date. †Elevation of gauge zero is 527'.85. ‡Location 300' above foot of Main street.

The elevations of water surface given in the tabulation are the elevations at the location of each gauge during the time that gauge was read.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 417, described as "B. M. 9 of 1879—on southeast corner of iron window sill, ground floor, west side of Main street entrance to 3-story brick, southeast corner Main and Third sts." Elevation 564'.154.

OMAHA, NEB.

Bridge Gauge Records.

From April 10th, 1872 to August 31st, 1878. Elevation of gauge zero is 545'.61. Location at bridge.

The elevations from bridge gauge records are, with few exceptions, from a single daily reading, time of taking unknown.

* NOTE.—This is a permanent gauge, with what was thought to be a stable zero. It has, however, settled somewhat, and though partially repaired, its readings are still higher than true elevations by approximately 0'.1, though the exact corrections differ somewhat at different parts of the gauge.

† NOTE.—From October 1st, 1882 to date, these readings were reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

‡ NOTE.—Prior to September 1st, 1881, these readings were taken on gauge at foot of Main street.

Missouri River U. S. E. Gauges.

1. From Sept. 1st, 1878 to April 26th, 1879. Elevation of gauge zero is 545'.61. Location at bridge.

2. From April 27th, 1879 to April 10th, 1880. *Elevation of gauge zero is 548'.07. Location at foot of Farnham street.

3. From April 11th, 1880 to date. †Elevation of gauge zero is 545'.61. Location same as 1.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 428, described as "On collar (at joint) of north cylinder, west pier of U. P. railroad bridge." Elevation 567'.984.

SIOUX CITY, IA.

Missouri River U. S. E. Gauges.

1. From September 2d, 1878 to September 30th, 1882. Elevation of gauge zero is 583'.64. Location just below the mouth of Perry creek.

2. From October 1st, 1882 to date. Elevation of gauge zero is 0'.00. ‡Location same as 1.

Reference B. Ms. are: 1. U. S. E. B. M. of Mo. River Survey between Nos. 466-467, described as "B. M. A.—centre of outside edge of sill of false window of basement, west side, near southwest corner of Court House." Elevation 697'.517.

2. Gauge B. M. described as "Under side of marked brick in water-table, southeast corner of Sanborn & Follett's brick building, southwest corner of 3d and Water streets." Elevation 692'.424.

VERMILLION, DAK.

Missouri River U. S. E. Gauges.

1. From May 19th, 1879 to July 19th, 1879. Elevation of gauge zero is 592'.08. Location a short distance below Vermillion.

2. From October 1st, 1880 to March 26th, 1881. Elevation of gauge zero is 717'.53. Location same as 1.

3. From April 27th, 1881 to October 14th, 1882. §Elevation of gauge zero is 644'.66. ||Location at Butler's Landing, about five miles south of Vermillion.

* NOTE.—In the tabulation the elevations given are elevations of water surface at the bridge. They were deduced from the readings on gauge 2 in the following way: Elevation at bridge equals $R + \text{elevation of zero (548'.07)} - \text{fall from gauge 2 to bridge (0'.21)}$, where R is reading on gauge 2. Hence, elevation at bridge = $R + 547'.86$.

† NOTE.—From October 1st, 1882 to date, these readings were reported to the St. Louis office already reduced to elevations above the St. Louis Directrix.

The elevations given in the tabulation during the latter part of 1884 are probably about 0'.8 too high. The exact value of this error, and where it begins, can not be given until further checks at Omaha can be made.

‡ NOTE.—From November 8th, 1882, to some time early in May, 1883, the readings were taken on a gauge about 400' below the location given, and elevations given in the tabulation for this time are elevations of water surface at this location.

§ NOTE.—From October 1st, 1882 to October 14th, 1882, these readings were reported to the St. Louis office reduced to elevations above the St. Louis Directrix.

|| NOTE.—This change of location is due to the river having left Vermillion about 3 miles inland when cut-off in the Spring of 1881 occurred.

The elevations of water surface given in the tabulation are the elevations at the location of each gauge during the time that gauge was read.

Reference B. M. is U. S. E. B. M. of Mo. River Survey No. 492, described as "On 4' cottonwood on side of bluff 500' below mouth of small stream, 500' above foot of shore bar formed on right bank of river by Vermillion cut-off, $\frac{1}{4}$ mile below house owned by ——— Butler." Elevation 731'.504.

MISCELLANEOUS GAUGE READINGS.

Missouri River.—Jamestown Landing, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									-4.33	-5.98	-7.13	-7.25
2									-4.45	-5.88	-7.18	-7.20
3									-4.63	-6.00	-7.20	-7.25
4									-4.78	-6.18	-7.23	-7.28
5									-4.90	-6.25	-7.23	-7.28
6									-5.00	-6.28	-7.28	-7.28
7									-5.08	-6.30	-7.28	-7.28
8									-5.15	-6.33	-7.23	-7.28
9									-4.93	-6.33	-7.23	-7.35
10									-5.13	-6.38	-7.28	-7.38
11									-5.25	-6.28	-7.28	-7.38
12									-5.30	-6.33	-7.23	-7.38
13									-5.30	-6.53	-7.25	-7.40
14									-5.28	-6.65	-7.28	-7.45
15									-5.23	-6.68	-7.35	-7.40
16									-5.10	-6.58	-7.28	-7.63
17									-5.08	-6.58	-7.28	-8.28
18									-5.15	-6.68	-7.28	-8.68
19									-5.31	-6.78	-7.28	-8.88
20									-5.38	-6.85	-7.23	-8.98
21									-5.38	-6.88	-7.23	-9.23
22								-2.28	-5.48	-6.85	-7.18	-9.28
23								-1.08	-5.60	-6.78	-7.13	-9.28
24								-1.08	-5.68	-6.88	-7.13	-9.58
25								-2.78	-5.78	-6.98	-7.13	-8.98
26								-3.28	-5.85	-6.98	-7.18	-8.98
27								-3.53	-5.88	-6.98	-7.20	-9.03
28								-3.63	-5.88	-7.05	-7.23	-9.23
29								-3.83	-5.98	-7.08	-7.28	-9.13
30								-4.03	-6.00	-7.13	-7.30	-8.80
31								-4.20	-6.00	-7.15	-7.30	-8.78

Missouri River.—Jamestown Landing, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	-8.78	-6.78	-8.23	-7.23	-4.70	-3.53	4.73	-1.18	.....	.....	.....	.....
2	-8.83	-6.33	-8.28	-5.78	-4.75	-3.53	4.93	-1.25	.....	.....	.....	.....
3	-9.28	-6.53	-8.33	-4.58	-4.88	-2.78	5.13	-1.23	.....	.....	.....	.....
4	-9.03	-6.83	-8.48	-4.45	-4.98	-2.08	4.73	-1.08	.....	.....	.....	.....
5	-8.98	-6.63	-8.58	-4.60	-4.98	-1.98	4.13	-1.08	.....	.....	.....	.....
6	-8.73	-6.58	-8.63	-4.78	-4.98	-1.88	3.68	— .92	.....	.....	.....	.....
7	-8.53	-7.18	-8.53	-4.55	-4.78	-1.33	3.63	— .87	.....	.....	.....	.....
8	-8.38	-7.23	-8.33	-4.15	-4.38	— .87	3.33	-1.08	.....	.....	.....	.....
9	-8.13	-7.53	-8.13	-4.10	-4.20	— .82	2.98	-1.48	.....	.....	.....	.....
10	-7.98	-7.53	-7.93	-2.23	-4.03	— .98	2.78	-1.78	.....	.....	.....	.....
11	-7.73	-7.48	-7.38	— .17	-3.93	-1.08	2.43	-2.08	.....	.....	.....	.....
12	-7.83	-7.38	-7.08	.33	-3.93	— .97	2.03	-2.48	.....	.....	.....	.....
13	-7.88	-6.78	-6.98	.73	-4.08	— .77	1.48	-2.73	.....	.....	.....	.....
14	-7.88	-6.48	-7.15	.93	-4.20	— .77	1.03	-2.98	.....	.....	.....	.....
15	-7.98	-6.83	-6.58	.78	-4.23	— .52	.78	-3.13	.....	.....	.....	.....
16	-7.98	-7.03	-5.73	.08	-4.08	— .07	.55	-3.43	.....	.....	.....	.....
17	-7.98	-7.68	-5.83	.77	-4.15	— .07	.28	-3.73	.....	.....	.....	.....
18	-7.98	-8.08	-5.83	-1.48	-4.20	.18	— .07	-3.93	.....	.....	.....	.....
19	-7.83	-8.38	-5.63	-2.18	-4.28	.88	— .40	-4.13	.....	.....	.....	.....
20	-7.83	-8.58	-5.48	-2.48	-4.40	1.53	— .47	-4.33	.....	.....	.....	.....
21	-7.93	-8.53	-5.55	-2.93	-4.43	2.18	.62	-4.48	.....	.....	.....	.....
22	-7.93	-8.33	-5.73	-3.28	-4.25	2.43	.72	-4.63	.....	.....	.....	.....
23	-7.83	-8.08	-5.98	-3.63	-4.13	2.23	.97	-4.80	.....	.....	.....	.....
24	-7.63	-8.08	-6.33	-3.93	-4.25	2.43	.67	-4.93	.....	.....	.....	.....
25	-7.43	-7.88	-6.53	-4.13	-4.33	1.83	.25	-5.13	.....	.....	.....	.....
26	-7.33	-7.58	-6.75	-4.33	-4.38	1.95	.15	-5.25	.....	.....	.....	.....
27	-7.18	-7.68	-6.88	-4.43	-4.33	2.80	.63	-5.33	.....	.....	.....	.....
28	-4.98	-7.88	-6.98	-4.53	-4.15	3.48	.10	-5.45	.....	.....	.....	.....
29	-6.33	—	-6.93	-4.55	-4.03	4.58	.67	-5.55	.....	.....	.....	.....
30	-6.58	—	-7.03	-4.63	-3.78	4.88	.90	-5.65	.....	.....	.....	.....
31	-6.38	—	-7.23	—	-3.53	—	-1.03	.....	.....	.....	.....	.....

Missouri River.—Cottleville Landing, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									30.21	28.71	27.46	27.46
2									30.6	28.76	27.46	27.46
3									29.91	28.61	27.46	27.46
4									29.81	28.41	27.46	27.46
5									29.71	28.36	27.46	27.46
6									29.61	28.36	27.46	27.46
7									29.51	28.31	27.46	27.36
8									29.41	28.26	27.46	27.36
9									29.71	28.26	27.46	27.36
10									29.51	28.26	27.36	27.36
11									29.41	28.21	27.46	27.36
12									29.31	28.11	27.46	27.26
13									29.26	28.01	27.36	27.26
14									29.31	27.96	27.36	27.26
15									29.51	27.96	27.36	27.11
16									29.66	28.06	27.36	26.56
17									29.61	28.01	27.36	26.11
18									29.41	27.91	27.36	25.76
19									29.26	27.81	27.36	25.66
20									29.26	27.76	27.36	25.36
21								31.66	29.16	27.76	27.36	25.11
22								32.01	29.11	27.76	27.41	24.96
23								32.76	28.96	27.76	27.46	24.86
24								32.01	28.91	27.66	27.51	24.76
25								31.26	28.81	27.66	27.56	24.61
26								31.01	28.76	27.66	27.46	24.36
27								30.91	28.71	27.66	27.46	24.01
28								30.76	28.66	27.61	27.46	24.16
29								30.61	28.61	27.56	27.36	24.31
30								30.46	28.66	27.56	27.36	24.36
31								30.31	28.66	27.56	27.36	24.36

Missouri River.—Cottleville Landing, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	24.46	28.11	26.36	38.36	30.11	31.26	38.45	33.21	.....	.....	.....	.....
2	24.46	28.31	26.26	30.01	29.91	31.46	38.80	33.06	.....	.....	.....	.....
3	26.76	27.91	26.21	30.46	29.81	32.31	38.85	33.21	.....	.....	.....	.....
4	28.16	28.06	26.01	30.36	29.76	32.66	38.45	33.26	.....	.....	.....	.....
5	27.76	28.36	25.96	30.21	29.76	32.61	37.90	33.11	.....	.....	.....	.....
6	27.51	27.76	26.01	29.41	29.76	32.76	37.65	33.15	.....	.....	.....	.....
7	27.36	27.61	26.16	30.56	30.11	33.81	37.60	33.10	.....	.....	.....	.....
8	27.56	27.41	26.41	30.76	30.56	33.85	37.25	33.16	.....	.....	.....	.....
9	27.66	27.21	26.61	30.91	30.76	33.70	37.00	32.76	.....	.....	.....	.....
10	27.66	27.26	27.16	32.63	30.96	33.40	36.80	32.46	.....	.....	.....	.....
11	27.56	27.31	27.76	34.21	31.06	33.30	36.50	32.06	.....	.....	.....	.....
12	27.41	27.56	27.86	34.56	31.01	33.55	36.00	31.66	.....	.....	.....	.....
13	27.41	28.46	27.81	34.81	30.81	33.75	35.60	31.41	.....	.....	.....	.....
14	27.36	28.06	27.91	34.81	30.76	33.75	35.30	31.16	.....	.....	.....	.....
15	27.36	27.76	28.91	34.46	30.81	34.10	35.05	30.91	.....	.....	.....	.....
16	27.36	27.36	29.11	33.96	30.86	34.35	34.80	30.56	.....	.....	.....	.....
17	27.36	26.56	29.06	33.41	30.76	34.30	34.35	30.31	.....	.....	.....	.....
18	27.26	26.21	29.11	32.86	30.76	34.75	34.00	30.11	.....	.....	.....	.....
19	27.26	25.91	29.31	32.31	30.71	35.35	33.85	29.91	.....	.....	.....	.....
20	27.16	25.91	29.36	32.06	30.56	35.90	33.75	29.71	.....	.....	.....	.....
21	27.06	26.06	29.26	31.76	30.56	36.30	33.65	29.51	.....	.....	.....	.....
22	27.01	26.31	28.96	31.41	30.61	36.30	33.55	29.41	.....	.....	.....	.....
23	27.31	26.46	28.71	31.16	30.76	36.10	33.45	29.21	.....	.....	.....	.....
24	27.61	26.56	28.51	30.91	30.71	36.30	33.90	29.11	.....	.....	.....	.....
25	27.91	26.96	28.21	30.66	30.56	35.55	34.25	29.01	.....	.....	.....	.....
26	28.01	27.06	27.91	30.56	30.56	36.15	34.85	28.81	.....	.....	.....	.....
27	28.56	26.76	27.86	30.56	30.61	36.75	34.85	28.76	.....	.....	.....	.....
28	26.96	26.41	27.86	30.51	30.76	37.50	34.05	28.61	.....	.....	.....	.....
29	27.46		27.91	30.41	30.56	38.40	33.70	28.51	.....	.....	.....	.....
30	27.86		27.71	30.16	31.21	38.55	33.50	28.41	.....	.....	.....	.....
31	27.91		27.51		31.26		33.35	.....	.....	.....	.....	.....

Missouri River.—Washington, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									51.48	49.93	48.33	48.33
2									51.33	49.98	48.33	48.33
3									51.18	49.80	48.33	48.33
4									51.03	49.68	48.33	48.38
5									50.88	49.60	48.33	48.40
6									50.83	49.48	48.33	48.43
7									50.78	49.43	48.33	48.33
8									50.73	49.38	48.33	48.38
9									50.88	49.33	48.33	48.33
10									50.73	49.35	48.28	48.33
11									50.58	49.30	48.28	48.33
12									50.53	49.13	48.30	48.33
13									50.58	49.05	48.23	48.28
14									50.68	49.05	48.18	48.23
15									50.88	49.13	48.18	48.23
16									51.03	49.13	48.20	48.18
17									50.93	49.00	48.23	48.13
18									50.68	48.88	48.25	48.43
19									50.53	48.78	48.33	51.48
20									50.53	48.73	48.43	52.38
21								53.48	50.43	48.73	48.43	52.33
22								53.83	50.33	48.73	48.43	51.23
23								54.03	50.23	48.70	48.45	51.08
24								53.43	50.13	48.65	48.43	51.03
25								52.83	50.03	48.63	48.38	50.63
26								52.43	49.93	48.65	48.38	50.53
27								52.13	49.93	48.53	48.33	50.53
28								52.03	49.93	48.53	48.33	50.53
29								51.83	49.83	48.43	48.33	50.53
30								51.53	49.93	48.33	48.33	50.73
31								51.53	49.93	48.33	48.33	50.73

Missouri River.—Washington, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	50.73	50.93	45.53	50.23	51.70	52.98	60.66	54.40	.....	.....	.....	.....
2	50.53	50.70	45.53	51.38	51.63	53.48	61.07	54.33	.....	.....	.....	.....
3	50.33	49.53	45.68	51.73	51.50	54.23	60.99	54.33	.....	.....	.....	.....
4	50.33	48.93	45.53	51.70	51.43	54.43	60.44	54.33	.....	.....	.....	.....
5	50.23	47.53	45.65	51.38	51.53	54.43	60.01	54.48	.....	.....	.....	.....
6	50.23	47.53	45.70	51.58	51.63	54.73	59.89	54.53	.....	.....	.....	.....
7	50.23	47.70	45.80	51.98	52.20	55.33	59.79	54.35	.....	.....	.....	.....
8	50.23	47.73	46.43	52.08	52.48	55.33	59.38	54.10	.....	.....	.....	.....
9	50.35	47.68	47.33	52.75	52.65	54.88	59.05	53.78	.....	.....	.....	.....
10	50.48	47.68	48.68	55.50	52.88	54.95	58.68	53.73	.....	.....	.....	.....
11	50.53	47.68	48.93	56.33	52.98	55.25	58.45	53.53	.....	.....	.....	.....
12	50.53	47.93	48.85	56.75	52.78	55.33	58.18	53.30	.....	.....	.....	.....
13	50.53	47.98	48.95	57.15	52.63	55.25	57.83	53.18	.....	.....	.....	.....
14	50.48	47.70	50.13	56.88	52.58	55.45	57.28	53.03	.....	.....	.....	.....
15	50.48	47.63	50.18	56.40	52.73	55.83	56.85	53.03	.....	.....	.....	.....
16	50.48	47.53	50.15	55.65	52.73	55.80	56.48	52.73	.....	.....	.....	.....
17	50.43	47.33	50.38	54.93	52.68	56.00	56.08	52.30	.....	.....	.....	.....
18	50.43	46.93	50.53	54.43	52.60	56.68	55.63	52.08	.....	.....	.....	.....
19	50.33	46.43	50.40	53.85	52.40	57.23	55.53	51.80	.....	.....	.....	.....
20	50.43	45.78	50.28	53.48	52.38	57.80	55.48	51.43	.....	.....	.....	.....
21	50.23	45.00	49.95	52.85	52.45	58.25	55.43	51.18	.....	.....	.....	.....
22	50.23	45.23	49.68	52.60	52.63	58.05	55.38	50.90	.....	.....	.....	.....
23	50.43	46.88	49.48	52.33	52.50	58.08	55.48	50.68	.....	.....	.....	.....
24	50.48	47.35	49.18	52.03	52.40	58.13	55.73	50.40	.....	.....	.....	.....
25	50.43	47.78	48.98	52.25	52.33	57.58	55.93	50.18	.....	.....	.....	.....
26	50.43	47.43	48.95	52.08	52.28	58.43	56.20	49.90	.....	.....	.....	.....
27	50.43	46.03	49.05	52.08	52.38	59.23	55.63	49.68	.....	.....	.....	.....
28	50.48	45.73	49.00	51.95	52.58	59.79	55.33	49.38	.....	.....	.....	.....
29	50.53		48.88	51.88	52.83	60.69	54.95	49.25	.....	.....	.....	.....
30	50.73		48.63	51.80	53.05	60.67	54.58	48.95	.....	.....	.....	.....
31	50.93		48.63		53.08		54.53	.....	.....	.....	.....	.....

Missouri River.—Fisher's Landing, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									95.02	93.77	92.32	92.52
2									94.87	93.67	92.32	92.52
3									94.82	93.47	92.32	92.52
4									94.72	93.37	92.32	92.52
5									94.67	93.22	92.32	92.47
6									94.52	93.22	92.32	92.42
7									94.42	93.22	92.37	92.37
8									94.32	93.22	92.32	92.42
9									94.37	93.22	92.32	92.42
10									94.32	93.22	92.37	92.37
11									94.32	93.07	92.42	92.32
12									94.42	93.02	92.32	92.32
13									94.42	92.92	92.32	92.32
14									94.62	93.07	92.32	92.32
15									94.87	93.02	92.32	91.97
16									94.77	92.92	92.32	91.17
17									94.57	92.87	92.32	90.62
18									94.37	92.77	92.42	90.57
19								97.72	94.32	92.67	92.42	90.47
20								97.42	94.32	92.72	92.47	89.92
21								97.57	94.27	92.72	92.52	89.47
22								98.00	94.07	92.77	92.62	89.32
23								97.55	93.97	92.62	92.62	89.17
24								96.92	93.87	92.62	92.62	90.07
25								96.12	93.82	92.52	92.57	91.32
26								96.02	93.82	92.52	92.52	91.37
27								95.77	93.67	92.52	92.47	91.57
28								95.57	93.62	92.52	92.42	91.52
29								95.52	93.62	92.52	92.42	91.37
30								95.37	93.72	92.42	92.42	91.42
31								95.22	93.72	92.42	92.42	91.37

Missouri River.—Fisher's Landing, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	91.47	92.07	90.87	92.82	94.22	96.02	104.07	97.67	.....	.....	.....	.....
2	91.42	92.12	90.82	94.37	94.12	96.87	104.22	97.85	.....	.....	.....	.....
3	91.02	92.12	90.57	94.22	94.07	97.32	103.92	97.97	.....	.....	.....	.....
4	91.12	92.12	90.52	93.82	94.12	97.32	103.62	98.02	.....	.....	.....	.....
5	91.37	92.17	90.47	93.67	94.17	97.42	103.17	98.27	.....	.....	.....	.....
6	91.57	92.22	90.77	94.12	94.57	97.95	103.17	98.32	.....	.....	.....	.....
7	91.62	91.82	91.37	94.37	95.02	98.47	102.82	98.02	.....	.....	.....	.....
8	91.72	92.47	91.22	94.42	95.17	98.42	102.47	97.52	.....	.....	.....	.....
9	91.72	91.82	92.07	96.12	95.32	98.07	102.22	97.17	.....	.....	.....	.....
10	91.67	91.82	92.57	98.72	95.57	97.97	101.87	96.92	.....	.....	.....	.....
11	91.52	92.22	92.52	99.37	95.47	98.22	101.37	96.42	.....	.....	.....	.....
12	91.52	93.27	92.37	99.87	95.37	98.52	100.77	96.12	.....	.....	.....	.....
13	91.42	93.07	92.57	99.92	95.22	98.42	100.22	95.97	.....	.....	.....	.....
14	91.32	92.72	93.07	99.62	95.22	98.72	99.87	95.72	.....	.....	.....	.....
15	91.32	91.97	93.07	98.97	95.32	99.27	99.62	95.57	.....	.....	.....	.....
16	91.47	91.22	92.92	98.07	95.32	99.17	99.17	95.27	.....	.....	.....	.....
17	91.57	90.77	92.92	97.22	95.32	99.62	98.82	94.97	.....	.....	.....	.....
18	91.62	90.52	93.12	96.62	95.27	100.22	98.67	94.77	.....	.....	.....	.....
19	91.62	90.67	93.17	96.22	95.12	100.82	98.57	94.57	.....	.....	.....	.....
20	91.57	90.92	92.87	95.82	95.17	101.42	98.37	94.47	.....	.....	.....	.....
21	91.62	91.27	92.52	95.42	95.47	101.67	98.07	94.37	.....	.....	.....	.....
22	91.77	91.37	92.17	95.02	95.52	101.27	97.87	94.17	.....	.....	.....	.....
23	92.07	91.22	91.77	94.82	95.27	101.77	98.37	93.97	.....	.....	.....	.....
24	92.12	91.97	91.52	94.67	95.17	100.72	98.37	93.87	.....	.....	.....	.....
25	92.42	91.92	91.07	94.47	95.12	100.52	99.47	93.77	.....	.....	.....	.....
26	92.62	91.62	91.07	94.32	95.17	101.77	99.92	93.57	.....	.....	.....	.....
27	92.87	91.07	91.17	94.42	95.37	102.62	98.97	93.42	.....	.....	.....	.....
28	92.62	90.87	91.17	94.37	95.57	103.57	98.37	93.27	.....	.....	.....	.....
29	92.27		90.92	94.32	95.87	104.07	98.22	93.22	.....	.....	.....	.....
30	92.17		90.72	94.32	95.92	103.92	98.02	93.07	.....	.....	.....	.....
31	92.12		91.87		95.77		97.82	.....	.....	.....	.....	.....

Missouri River.—Providence, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									138.75	137.35	135.85	135.95
2									138.50	137.20	135.85	135.95
3									138.40	136.95	135.85	135.95
4									138.35	136.85	135.85	135.95
5									138.25	136.85	135.85	135.85
6									138.15	136.85	135.85	135.85
7									135.05	136.85	135.85	135.75
8									138.00	136.85	135.85	135.75
9									137.90	136.85	135.85	135.75
10									137.95	136.70	135.85	135.75
11									138.00	136.55	135.85	135.75
12									138.05	136.55	135.85	135.75
13									138.20	136.55	135.85	135.75
14									138.50	136.55	135.85	135.75
15									138.40	136.55	135.85	135.20
16								141.75	138.25	136.50	135.85	134.85
17								141.50	138.00	136.30	135.90	134.65
18								141.30	137.95	136.25	135.95	134.65
19								141.00	137.95	136.25	135.95	134.10
20								140.70	137.90	136.25	135.95	133.45
21								140.55	137.75	136.25	135.95	133.35
22								140.25	137.65	136.25	136.05	133.25
23								140.25	137.50	136.20	136.05	133.25
24								139.90	137.35	136.05	136.00	132.95
25								139.75	137.35	136.00	135.95	132.75
26								139.65	137.35	135.95	135.95	132.55
27								1				

Missouri River.—Providence, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	132.55	135.35	133.95	138.05	139.15	141.05	148.30	142.65	.....	.....	.....	.....
2	132.65	135.25	133.55	138.10	139.15	141.55	148.30	142.75	.....	.....	.....	.....
3	132.70	135.45	133.35	137.90	139.15	141.75	147.85	142.75	.....	.....	.....	.....
4	132.80	135.35	133.25	137.75	139.15	141.80	147.15	142.90	.....	.....	.....	.....
5	133.45	135.40	133.40	138.10	139.30	142.05	146.55	143.05	.....	.....	.....	.....
6	134.65	134.95	133.80	138.35	139.75	142.35	146.00	142.90	.....	.....	.....	.....
7	134.95	134.95	133.85	138.35	139.85	142.80	146.05	142.65	.....	.....	.....	.....
8	135.00	134.95	134.35	139.25	140.00	142.50	146.15	142.35	.....	.....	.....	.....
9	135.10	134.70	135.30	141.35	140.30	142.35	145.95	142.00	.....	.....	.....	.....
10	135.10	134.65	134.90	143.05	140.45	142.40	145.75	141.50	.....	.....	.....	.....
11	135.15	136.25	134.85	143.80	140.25	142.85	145.35	141.25	.....	.....	.....	.....
12	135.00	135.60	135.00	144.50	140.05	142.90	144.70	141.10	.....	.....	.....	.....
13	134.90	135.60	136.60	144.40	139.95	143.05	144.40	140.70	.....	.....	.....	.....
14	134.95	135.50	136.65	143.55	139.95	143.25	144.05	140.50	.....	.....	.....	.....
15	134.95	134.90	136.50	142.65	139.85	143.35	143.35	140.35	.....	.....	.....	.....
16	134.95	133.20	136.50	141.90	139.85	143.55	143.10	140.25	.....	.....	.....	.....
17	134.95	133.50	136.85	141.30	140.00	144.20	143.05	140.10	.....	.....	.....	.....
18	134.95	133.65	136.95	140.70	139.90	144.50	142.95	139.90	.....	.....	.....	.....
19	134.95	133.85	136.85	140.50	139.85	145.05	142.95	139.70	.....	.....	.....	.....
20	134.95	134.20	136.65	140.05	139.95	145.45	142.50	139.60	.....	.....	.....	.....
21	134.95	134.25	136.10	139.60	140.15	145.50	142.30	139.45	.....	.....	.....	.....
22	135.00	134.35	135.95	139.85	140.00	145.20	142.55	139.30	.....	.....	.....	.....
23	134.95	134.90	135.70	139.85	139.95	144.80	143.00	139.10	.....	.....	.....	.....
24	134.95	134.95	135.55	139.70	139.95	144.05	143.20	138.95	.....	.....	.....	.....
25	134.95	134.65	135.55	139.65	139.95	145.20	143.80	138.85	.....	.....	.....	.....
26	134.95	133.95	135.55	139.55	140.15	145.95	143.65	138.80	.....	.....	.....	.....
27	135.20	133.95	135.60	139.50	140.30	146.40	143.30	138.65	.....	.....	.....	.....
28	135.55	134.40	135.50	139.45	140.55	147.45	142.80	138.55	.....	.....	.....	.....
29	135.55		135.45	139.40	140.75	147.85	142.65	138.45	.....	.....	.....	.....
30	135.55		135.65	139.15	140.60	147.95	142.55	138.30	.....	.....	.....	.....
31	135.45		137.25		140.55		142.50	138.15	.....	.....	.....	.....

Missouri River.—New Frankfort, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									194.32	192.72	191.27	191.37
2									194.22	192.52	191.27	191.37
3									194.17	192.32	191.27	191.27
4									194.07	192.27	191.37	191.17
5									193.97	192.27	191.37	191.17
6									193.87	192.27	191.27	191.07
7									193.72	192.27	191.27	191.07
8									193.52	192.27	191.27	191.07
9									193.67	192.07	191.27	191.07
10									193.67	191.82	191.27	190.97
11									193.77	191.77	191.27	190.87
12									193.92	191.82	191.32	190.87
13									194.22	191.92	191.27	190.87
14								198.57	194.32	191.82	191.27	190.77
15								198.57	194.12	191.77	191.27	190.37
16								198.07	193.92	191.72	191.37	189.87
17								197.62	193.72	191.62	191.42	189.57
18								197.37	193.67	191.57	191.52	189.57
19								196.92	193.67	191.72	191.57	189.57
20								196.47	193.47	191.62	191.67	189.57
21								196.07	193.27	191.52	191.67	189.57
22								195.82	193.17	191.42	191.67	189.57
23								195.62	192.92	191.42	191.57	189.57
24								195.52	192.87	191.27	191.57	189.57
25								195.57	192.82	191.37	191.47	189.57
26								195.42	192.72	191.37	191.47	189.57
27								195.22	192.72	101.37	191.37	189.57
28								195.07	192.87	101.37	191.37	189.57
29								194.92	193.02	101.32	191.37	189.57
30								194.72	192.92	101.27	191.37	189.57
31								194.52	192.92	191.27	191.37	189.57

Missouri River.—New Frankfort, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	189.57	189.77	189.67	193.62	191.97	195.07	202.52	196.52	.....	.....	.....	.....
2	189.57	189.77	189.57	193.32	191.92	195.37	202.22	196.57	.....	.....	.....	.....
3	189.57	189.77	189.47	192.92	191.87	195.27	201.42	196.82	.....	.....	.....	.....
4	189.57	190.02	189.47	193.27	192.12	195.47	200.67	197.02	.....	.....	.....	.....
5	189.57	190.12	189.57	193.97	192.82	195.77	200.72	196.92	.....	.....	.....	.....
6	189.57	190.37	189.57	193.67	193.07	196.07	200.47	196.72	.....	.....	.....	.....
7	189.57	190.92	189.67	193.92	193.12	196.02	200.17	196.22	.....	.....	.....	.....
8	189.57	191.72	189.67	195.47	193.32	195.72	200.12	195.97	.....	.....	.....	.....
9	189.57	.....	189.67	197.17	193.47	195.67	199.87	195.72	.....	.....	.....	.....
10	189.57	.....	189.67	197.87	193.22	196.12	199.42	196.17	.....	.....	.....	.....
11	189.57	.....	189.87	198.27	193.07	196.32	198.97	195.12	.....	.....	.....	.....
12	189.57	.....	191.37	198.37	192.92	196.17	198.32	194.77	.....	.....	.....	.....
13	189.57	.....	191.67	197.77	192.97	196.62	198.22	194.57	.....	.....	.....	.....
14	189.57	.....	191.47	196.72	192.97	196.82	198.02	194.42	.....	.....	.....	.....
15	189.57	.....	191.52	195.57	192.87	196.87	197.67	193.87	.....	.....	.....	.....
16	189.57	.....	191.92	194.92	192.97	197.42	197.17	193.47	.....	.....	.....	.....
17	189.57	.....	192.02	194.42	192.92	198.12	196.97	193.27	.....	.....	.....	.....
18	189.57	.....	191.77	193.97	192.77	198.47	196.92	193.02	.....	.....	.....	.....
19	189.57	.....	191.57	193.62	192.92	198.92	196.82	192.82	.....	.....	.....	.....
20	189.57	.....	191.17	193.22	193.17	199.07	196.67	192.72	.....	.....	.....	.....
21	189.57	.....	190.97	193.02	193.07	198.82	196.57	192.52	.....	.....	.....	.....
22	189.57	.....	190.72	192.82	192.97	198.37	196.82	192.32	.....	.....	.....	.....
23	189.57	189.57	190.52	192.67	192.87	197.92	196.77	192.12	.....	.....	.....	.....
24	189.57	189.57	190.37	192.57	192.92	197.37	197.52	192.02	.....	.....	.....	.....
25	189.67	189.72	190.62	192.47	193.17	198.37	197.82	191.82	.....	.....	.....	.....
26	189.67	189.62	190.77	192.47	193.37	199.47	196.82	191.67	.....	.....	.....	.....
27	189.77	189.57	190.42	192.27	193.67	200.52	196.62	191.52	.....	.....	.....	.....
28	189.77	189.57	190.12	192.17	193.97	201.97	196.67	191.27	.....	.....	.....	.....
29	189.77	.....	190.17	192.12	193.87	201.87	196.37	191.17	.....	.....	.....	.....
30	189.77	.....	192.77	191.97	193.77	202.27	196.22	191.02	.....	.....	.....	.....
31	189.77	.....	193.57	.....	194.27	.....	196.22	190.87	.....	.....	.....	.....

Missouri River.—Miami, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									217.7	215.7	213.6	213.7
2									217.5	215.5	213.5	213.7
3									217.4	215.4	213.5	213.6
4									217.3	215.3	213.5	213.5
5									217.2	215.3	213.5	213.4
6									217.1	215.3	213.4	213.3
7									217.0	215.2	213.4	213.3
8									217.1	215.1	213.5	213.4
9									217.0	215.0	213.5	213.3
10									216.9	214.8	213.5	213.3
11									216.8	214.8	213.5	213.2
12									217.1	214.8	213.5	213.1
13								222.0	217.3	214.8	213.5	213.0
14								222.0	217.2	214.6	213.5	212.7
15								222.2	217.0	214.4	213.6	211.9
16								221.7	216.7	214.3	213.6	211.7
17								221.3	216.7	214.2	213.7	211.4
18								221.0	216.6	214.3	213.7	210.2
19								220.6	216.6	214.3	213.8	212.8
20								220.3	216.3	214.1	213.9	215.5
21								220.0	216.2	214.1	213.9	215.4
22								219.6	216.2	214.0	214.0	215.2
23								219.4	216.2	214.0	213.9	214.3
24								219.3	216.1	213.8	213.7	214.2
25								219.3	216.0	213.8	213.7	214.1
26								219.1	215.9	213.8	213.7	213.8
27								218.8	216.0	213.8	213.6	213.4
28								218.6	216.2	213.7	213.6	213.1
29								218.4	216.1	213.6	213.6	213.4
30								218.1	215.9	213.6	213.7	213.5
31								217.9	215.9	213.6	213.7	213.5

Missouri River.—Miami, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	213.4	214.1	210.6	217.6	218.6	221.8	227.2	222.7	.....	.....	.....	.....
2	213.4	214.4	210.6	217.3	218.6	222.0	226.9	222.6	.....	.....	.....	.....
3	213.3	214.5	210.5	217.1	218.6	221.8	226.5	222.7	.....	.....	.....	.....
4	213.1	214.9	210.9	217.4	219.0	221.9	226.4	223.0	.....	.....	.....	.....
5	213.4	215.0	211.4	217.9	219.8	222.2	226.5	222.8	.....	.....	.....	.....
6	213.4	215.1	213.0	217.7	219.9	222.3	226.1	222.4	.....	.....	.....	.....
7	213.4	215.2	213.2	218.2	219.9	222.0	225.7	222.0	.....	.....	.....	.....
8	213.4	215.4	213.1	220.0	220.3	222.0	225.7	222.0	.....	.....	.....	.....
9	213.2	215.7	212.5	222.0	220.2	222.0	225.6	221.4	.....	.....	.....	.....
10	213.2	212.9	212.4	223.4	220.0	222.5	225.3	221.0	.....	.....	.....	.....
11	213.2	209.4	213.0	223.7	219.9	222.6	224.9	220.2	.....	.....	.....	.....
12	213.2	209.4	214.9	223.7	219.8	222.5	224.6	219.9	.....	.....	.....	.....
13	213.2	210.4	215.1	225.1	220.0	222.5	224.5	219.7	.....	.....	.....	.....
14	213.2	209.8	214.6	224.0	220.1	222.5	224.3	219.4	.....	.....	.....	.....
15	213.2	211.4	214.9	223.0	220.1	222.5	223.8	219.0	.....	.....	.....	.....
16	213.0	210.7	215.4	221.3	220.0	223.3	223.6	218.8	.....	.....	.....	.....
17	213.0	210.7	215.5	220.2	219.9	223.7	223.5	218.6	.....	.....	.....	.....
18	213.0	210.8	215.3	219.9	219.8	224.3	223.5	218.3	.....	.....	.....	.....
19	213.0	210.8	214.8	219.6	220.1	225.0	223.1	218.2	.....	.....	.....	.....
20	213.0	210.8	214.3	220.0	220.3	225.4	222.8	218.0	.....	.....	.....	.....
21	213.2	210.9	214.0	219.6	220.1	225.2	222.6	217.7	.....	.....	.....	.....
22	213.2	210.9	213.7	219.4	220.0	224.8	222.5	217.6	.....	.....	.....	.....
23	213.3	210.9	213.3	219.3	220.0	224.2	222.5	217.3	.....	.....	.....	.....
24	213.3	210.9	213.3	219.1	280.0	224.0	222.8	217.2	.....	.....	.....	.....
25	213.4	211.0	213.4	219.2	220.0	225.1	223.3	217.1	.....	.....	.....	.....
26	213.5	210.9	213.5	219.1	220.2	225.6	222.8	216.9	.....	.....	.....	.....
27	213.6	210.8	212.9	219.1	220.5	226.4	222.8	216.8	.....	.....	.....	.....
28	213.7	210.7	212.6	219.0	220.8	227.2	222.7	216.7	.....	.....	.....	.....
29	213.9		213.0	218.8	220.6	226.8	222.4	216.6	.....	.....	.....	.....
30	214.0		216.9	218.7	220.8	227.1	222.4	216.3	.....	.....	.....	.....
31	214.0		217.7		221.5		222.4	.....	.....	.....	.....	.....

Missouri River.—Camden, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									272.1	270.4	269.1	269.1
2									272.0	270.3	269.1	269.1
3									271.9	270.3	269.1	268.9
4									271.9	270.1	269.1	268.9
5									271.7	270.1	269.1	268.9
6									271.7	270.1	269.1	268.9
7									271.5	270.1	269.1	268.9
8									271.7	270.1	269.1	268.7
9									271.7	269.9	269.1	268.7
10								275.9	271.7	269.9	269.1	268.7
11								275.8	271.9	269.9	269.1	268.7
12								275.5	272.0	269.9	269.1	268.7
13								275.5	272.1	269.9	269.1	268.7
14								275.6	271.8	269.7	269.1	268.0
15								275.3	271.7	269.7	269.3	267.3
16								274.8	271.5	269.7	269.3	266.8
17								274.6	271.5	269.7	269.3	266.5
18								274.2	271.3	269.7	269.3	266.1
19								274.1	271.2	269.7	269.5	265.9
20								273.8	271.1	269.7	269.5	265.7
21								273.6	271.0	269.5	269.5	265.5
22								273.4	270.7	269.5	269.3	265.5
23								273.3	270.7	269.3	269.1	265.5
24								273.3	270.7	269.3	269.1	265.5
25								273.1	270.7	269.3	269.1	268.1
26								273.0	270.7	269.3	269.1	268.1
27								272.9	270.8	269.3	269.1	268.1
28								272.7	270.9	269.1	269.1	267.7
29								272.6	270.7	269.1	269.1	267.7
30								272.3	270.6	269.1	269.1	267.7
31								272.1	270.6	269.1	269.1	267.7

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	267.7	.....	266.8	272.5	272.0	275.0	280.2	275.6	.....	.....	.....	.....
2	267.7	.....	266.8	272.6	272.0	274.8	280.2	275.6	.....	.....	.....	.....
3	267.7	.....	266.8	272.3	272.0	274.8	279.5	275.9	.....	.....	.....	.....
4	267.7	.....	267.0	273.1	272.2	275.0	279.2	276.0	.....	.....	.....	.....
5	267.7	.....	267.3	273.0	272.6	275.3	279.2	275.6	.....	.....	.....	.....
6	267.7	.....	267.7	273.0	273.0	275.5	278.4	275.2	.....	.....	.....	.....
7	267.7	.....	269.1	274.8	273.1	275.2	278.2	274.9	.....	.....	.....	.....
8	267.7	.....	268.5	276.8	273.2	275.0	278.2	274.5	.....	.....	.....	.....
9	267.7	267.7	268.3	277.9	273.0	275.5	278.1	274.1	.....	.....	.....	.....
10	267.7	267.4	268.4	278.3	272.8	275.8	277.9	273.5	.....	.....	.....	.....
11	267.7	268.4	268.8	278.6	272.8	275.6	277.8	273.2	.....	.....	.....	.....
12	267.7	268.5	270.9	278.1	272.8	275.5	277.0	273.0	.....	.....	.....	.....
13	267.7	267.7	270.6	276.7	273.0	275.4	276.9	272.8	.....	.....	.....	.....
14	267.7	267.3	270.6	275.6	272.7	275.8	276.5	272.6	.....	.....	.....	.....
15	267.7	267.3	271.0	274.9	272.6	276.7	276.1	272.4	.....	.....	.....	.....
16	267.7	267.4	271.1	274.4	272.4	277.4	275.8	272.2	.....	.....	.....	.....
17	267.7	267.6	270.9	274.1	272.0	277.4	275.8	272.0	.....	.....	.....	.....
18	267.7	267.6	270.7	273.7	272.2	277.5	275.8	272.0	.....	.....	.....	.....
19	267.7	267.4	270.3	273.0	273.0	278.1	275.6	271.8	.....	.....	.....	.....
20	267.7	267.2	270.0	272.8	272.8	278.2	275.6	271.6	.....	.....	.....	.....
21	267.7	267.0	269.7	272.8	272.6	277.9	275.8	271.4	.....	.....	.....	.....
22	267.7	267.0	269.8	272.6	272.6	277.2	275.6	271.4	.....	.....	.....	.....
23	267.7	267.0	269.2	272.4	272.6	276.7	275.8	271.2	.....	.....	.....	.....
24	267.7	267.0	269.5	272.4	272.8	276.7	276.3	271.0	.....	.....	.....	.....
25	267.7	267.0	269.6	272.4	273.0	277.6	275.7	271.0	.....	.....	.....	.....
26	267.8	267.0	269.1	272.2	273.2	277.2	275.4	271.0	.....	.....	.....	.....
27	268.1	267.0	268.7	272.2	273.5	279.4	275.5	270.8	.....	.....	.....	.....
28	268.3	267.0	269.0	272.2	273.3	279.8	275.2	270.8	.....	.....	.....	.....
29	268.8	.....	271.9	272.0	273.2	280.1	275.2	270.6	.....	.....	.....	.....
30	268.9	.....	272.6	272.0	273.4	280.5	275.2	270.6	.....	.....	.....	.....
31	.....	.....	272.9	272.0	273.4	.....	275.5	.....	.....	.....	.....	.....

Missouri River.—Missouri City, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									290.24	288.34	286.79	286.69
2									290.14	288.29	286.69	286.69
3									290.04	288.19	286.79	286.64
4									289.94	288.14	286.79	286.59
5									289.79	288.14	286.79	286.59
6									289.64	288.14	286.79	286.59
7									289.59	287.94	286.79	286.49
8									289.59	287.79	286.79	286.69
9								294.79	289.79	287.69	286.69	286.69
10								294.89	289.79	287.69	286.79	286.64
11								294.69	289.89	287.74	286.79	286.59
12								294.39	290.34	287.74	286.79	286.39
13								294.39	290.14	287.59	286.79	286.04
14								294.39	289.94	287.44	286.79	284.69
15								293.99	289.79	287.34	286.89	283.99
16								293.59	289.69	287.29	286.99	283.89
17								293.39	289.59	287.49	287.09	283.79
18								292.89	289.49	287.39	287.09	283.49
19								292.69	289.19	287.29	287.14	282.54
20								292.19	289.19	287.19	287.19	282.39
21								291.99	289.04	287.09	287.24	282.39
22								291.84	288.84	287.09	287.19	282.39
23								291.79	288.79	286.99	287.09	282.09
24								291.79	288.79	286.94	286.99	281.89
25								291.59	288.69	286.94	286.89	281.79
26								291.34	288.69	286.84	286.89	281.79
27								291.09	288.84	286.89	286.89	282.09
28								290.99	288.79	286.79	286.84	282.19
29								290.74	288.74	286.79	286.74	282.29
30								290.49	288.49	286.79	286.69	282.39
31								290.39	288.49	286.79	286.79	282.89

Missouri River.—Missouri City, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	282.99	285.59	281.89	288.29	290.39	293.74	299.64	294.69	.....	.....	.....	.....
2	283.69	285.59	282.34	288.44	290.34	293.44	299.49	294.59	.....	.....	.....	.....
3	284.79	285.59	282.69	288.59	290.54	293.49	298.89	294.99	.....	.....	.....	.....
4	284.79	285.59	283.19	289.14	291.44	293.94	298.99	294.79	.....	.....	.....	.....
5	284.49	285.69	283.49	287.79	291.49	294.39	298.79	294.39	.....	.....	.....	.....
6	284.29	285.59	284.89	288.74	291.49	294.39	298.44	293.94	.....	.....	.....	.....
7	284.29	285.24	284.69	289.59	291.79	294.04	298.39	293.69	.....	.....	.....	.....
8	284.19	284.04	284.24	291.24	291.79	293.84	298.49	292.99	.....	.....	.....	.....
9	284.19	283.94	284.19	292.79	291.54	294.34	298.14	292.39	.....	.....	.....	.....
10	284.09	284.29	284.99	295.44	291.39	294.64	297.59	292.09	.....	.....	.....	.....
11	283.99	285.49	286.89	296.99	291.39	294.49	297.09	291.79	.....	.....	.....	.....
12	283.99	284.04	286.94	296.79	291.39	294.34	296.89	291.54	.....	.....	.....	.....
13	283.99	283.34	286.39	295.59	291.44	294.14	296.69	291.29	.....	.....	.....	.....
14	283.99	282.59	286.74	294.59	291.44	294.14	296.39	291.04	.....	.....	.....	.....
15	283.99	282.39	287.04	293.79	291.54	294.79	295.74	290.74	.....	.....	.....	.....
16	284.09	282.49	287.09	293.19	291.34	295.59	295.44	290.64	.....	.....	.....	.....
17	284.09	282.49	286.84	292.79	290.99	296.14	295.44	290.49	.....	.....	.....	.....
18	284.09	282.69	286.59	292.39	291.49	296.69	295.24	290.29	.....	.....	.....	.....
19	284.09	282.49	285.94	292.04	291.74	297.29	294.99	290.14	.....	.....	.....	.....
20	284.09	282.49	285.69	291.84	291.54	297.29	294.89	289.89	.....	.....	.....	.....
21	284.09	283.19	285.24	291.49	291.44	297.09	294.74	289.69	.....	.....	.....	.....
22	284.19	283.19	284.89	291.34	291.19	296.44	294.54	289.49	.....	.....	.....	.....
23	284.09	282.69	284.99	291.09	291.29	295.94	294.99	289.39	.....	.....	.....	.....
24	284.09	282.59	285.14	291.04	291.44	296.44	295.29	289.09	.....	.....	.....	.....
25	284.09	282.59	285.29	291.04	291.74	297.34	294.64	288.44	.....	.....	.....	.....
26	284.09	282.59	284.79	290.69	292.04	297.74	294.44	287.94	.....	.....	.....	.....
27	284.19	282.39	285.09	290.79	292.24	298.64	294.69	287.74	.....	.....	.....	.....
28	284.34	281.99	285.54	290.69	292.09	298.99	294.24	287.54	.....	.....	.....	.....
29	284.49		287.09	290.49	292.34	299.54	294.29	287.39	.....	.....	.....	.....
30	284.89		289.04	290.39	292.99	299.84	294.34	287.29	.....	.....	.....	.....
31	285.39		289.24		293.34		294.64	.....	.....	.....	.....	.....

Missouri River.—Blair, Neb., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1											577.4	577.6
2											577.7	577.8
3											577.7	577.9
4											577.7	577.5
5											577.6	578.0
6											577.6	578.1
7											577.5	578.1
8											577.5	578.3
9											577.5	578.4
10											577.6	578.5
11										577.8	577.9	578.7
12										577.7	577.9	578.8
13										577.7	577.9	578.6
14										577.6	577.9	578.5
15										577.7	577.9	578.3
16										577.8	576.2	578.2
17										577.8	574.5	578.1
18										577.8	573.9	578.1
19										577.8	573.5	578.0
20										577.7	573.3	578.0
21										577.6	573.3	577.9
22										577.6	573.4	577.8
23										577.6	573.1	577.7
24										577.6	573.4	577.6
25										577.6	574.1	577.7
26										577.5	575.1	577.7
27										577.5	575.6	577.7
28										577.5	576.7	577.8
29										577.4	576.9	577.8
30										577.4	577.2	577.9
31										577.3		577.9

Missouri River.—Blair, Neb., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	577.9	578.4	579.1	586.2	587.1	582.7	585.6	.....	.....	.....	.....	.....
2	577.9	578.4	579.1	587.0	586.0	582.4	584.9	.....	.....	.....	.....	.....
3	578.0	578.4	579.2	587.2	585.2	582.0	584.6	.....	.....	.....	.....	.....
4	578.0	578.4	579.2	587.3	584.3	581.8	584.5	.....	.....	.....	.....	.....
5	578.0	578.5	579.2	587.3	583.5	581.7	584.5	.....	.....	.....	.....	.....
6	578.0	578.5	579.3	587.8	583.0	581.8	584.6	.....	.....	.....	.....	.....
7	578.0	578.5	579.3	589.1	582.7	581.9	584.7	.....	.....	.....	.....	.....
8	578.1	578.5	579.6	589.8	582.7	582.2	584.7	.....	.....	.....	.....	.....
9	578.1	578.6	580.1	589.9	582.6	582.7	584.7	.....	.....	.....	.....	.....
10	578.1	578.6	580.5	589.1	582.5	583.0	585.1	.....	.....	.....	.....	.....
11	578.2	578.6	580.8	587.8	582.2	583.4	585.3	.....	.....	.....	.....	.....
12	578.2	578.6	581.3	587.2	581.9	584.0	585.5	.....	.....	.....	.....	.....
13	578.2	578.6	581.5	586.8	581.8	585.1	585.7	.....	.....	.....	.....	.....
14	578.3	578.6	582.0	586.4	581.7	586.1	585.6	.....	.....	.....	.....	.....
15	578.3	578.6	582.1	586.3	581.6	586.0	585.5	.....	.....	.....	.....	.....
16	578.3	578.6	582.1	587.1	581.9	585.3	585.3	.....	.....	.....	.....	.....
17	578.3	578.6	582.0	588.7	582.3	585.1	585.1	.....	.....	.....	.....	.....
18	578.4	578.6	582.0	590.0	582.5	584.8	584.9	.....	.....	.....	.....	.....
19	578.4	578.6	581.9	590.8	582.9	584.5	584.5	.....	.....	.....	.....	.....
20	578.4	578.7	582.0	591.6	583.1	584.3	584.3	.....	.....	.....	.....	.....
21	578.5	578.7	582.0	592.5	583.0	583.9	584.2	.....	.....	.....	.....	.....
22	578.5	578.7	582.3	593.4	581.9	583.9	584.1	.....	.....	.....	.....	.....
23	578.5	578.8	583.5	593.7	581.6	583.9	583.9	.....	.....	.....	.....	.....
24	578.5	578.9	584.5	593.8	581.4	584.1	583.8	.....	.....	.....	.....	.....
25	578.5	578.9	586.0	593.6	581.2	584.4	583.7	.....	.....	.....	.....	.....
26	578.5	579.0	586.9	592.2	581.2	585.1	583.5	.....	.....	.....	.....	.....
27	578.5	579.0	587.1	590.1	581.1	585.6	583.5	.....	.....	.....	.....	.....
28	578.5	579.0	587.1	588.9	581.5	585.9	583.3	.....	.....	.....	.....	.....
29	578.5		583.4	588.4	582.4	586.1	583.2	.....	.....	.....	.....	.....
30	578.5		581.7	588.0	582.6	586.2	583.1	.....	.....	.....	.....	.....
31	578.4		584.3		582.7			.....	.....	.....	.....	.....

H. F. 28—8

Missouri River.—Decatur, Neb., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1										624.2	623.6	622.8
2										624.2	623.7	622.7
3										624.1	623.7	622.5
4										624.1	624.1	622.4
5										624.0	624.0	622.3
6										624.0	623.9	622.4
7										623.9	623.6	622.5
8										623.9	623.7	622.6
9										623.9	623.7	622.7
10										623.9	623.7	622.8
11										623.8	623.6	622.9
12										523.8	623.6	623.0
13										623.9	623.7	622.9
14										623.9	623.5	622.9
15									625.1	623.9	623.3	622.7
16									624.9	624.1	623.2	622.7
17									624.8	624.2	623.1	622.9
18									624.8	624.2	621.5	622.9
19									624.8	624.1	621.2	622.9
20									624.7	624.0	621.2	622.9
21									624.7	623.9	624.1	622.8
22									624.7	623.8	623.8	622.8
23									624.6	623.7	623.6	622.8
24									624.5	623.8	623.5	622.8
25									624.6	623.7	623.4	622.8
26									624.5	623.7	623.1	622.8
27									624.5	623.7	623.3	622.9
28									624.5	623.6	623.3	622.8
29									624.4	623.6	623.2	622.9
30									624.3	623.7	623.0	622.9
31										623.6	.....	623.0

Missouri River.—Decatur, Neb., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	622.9	623.2	624.5	629.0	631.7	630.6	628.7	625.8	623.1	622.3	622.9	.....
2	622.8	623.3	624.6	633.6	631.6	630.5	628.4	625.7	623.1	622.3	622.9	.....
3	622.9	623.4	624.8	633.2	630.1	630.8	628.1	625.7	623.1	622.2	622.9	.....
4	622.9	623.4	624.6	633.2	629.7	630.5	627.7	625.8	623.0	622.3	623.0	.....
5	623.0	623.5	624.5	632.9	629.5	629.7	627.5	625.7	623.0	622.3	623.2	.....
6	623.1	623.6	624.6	633.9	629.4	629.6	627.8	625.5	623.1	622.3	623.4	.....
7	623.1	623.6	624.8	636.2	629.1	629.6	627.9	625.4	623.5	622.4	623.4	.....
8	623.1	623.6	625.0	636.9	628.7	629.8	628.0	625.3	623.8	622.5	623.2	.....
9	623.1	623.5	625.1	635.5	628.4	629.9	628.3	625.3	623.7	622.5	623.0	.....
10	623.1	623.6	625.5	633.8	628.1	629.8	628.5	625.3	623.6	622.6	622.8	.....
11	623.2	623.7	626.5	631.9	627.8	629.8	628.4	625.3	623.5	622.6	622.7	.....
12	623.2	623.7	627.9	631.4	627.7	630.2	628.6	525.1	623.5	622.4	622.6	.....
13	623.2	623.7	628.3	630.0	627.5	631.1	628.7	624.9	623.5	622.2	622.5	.....
14	623.3	623.8	628.4	630.8	627.4	631.5	628.7	624.9	623.5	622.0	622.4	.....
15	623.3	623.9	628.3	631.0	627.0	630.9	628.4	625.0	623.6	622.0	622.2	.....
16	623.2	623.9	628.2	631.6	626.9	630.3	628.0	624.8	623.7	622.0	622.2	.....
17	623.3	624.0	628.2	632.2	626.8	629.8	627.8	624.5	623.7	622.0	622.3	.....
18	623.3	624.0	628.2	634.2	627.6	629.7	627.6	624.3	633.5	622.1	622.1	.....
19	623.3	624.1	628.2	635.5	628.4	629.4	627.3	624.1	623.3	622.1	622.0	.....
20	623.4	624.1	628.1	635.9	628.6	629.3	627.1	624.0	622.9	622.2	619.7	.....
21	623.5	624.1	627.9	636.6	629.3	629.2	626.7	623.8	622.6	622.2	619.7	.....
22	623.4	624.1	627.9	637.2	627.8	629.0	626.3	623.7	622.4	622.4	619.7	.....
23	623.4	624.2	628.1	637.7	627.9	628.5	626.1	623.7	622.4	922.4	619.7	.....
24	623.3	624.3	629.7	638.1	627.7	627.9	626.2	623.6	622.3	622.4	619.7	.....
25	623.3	624.2	631.4	638.2	627.0	629.1	626.4	623.5	622.2	622.4	619.7	.....
26	623.2	624.2	633.4	637.8	627.1	630.1	626.2	623.5	622.1	622.5	619.7	.....
27	623.1	624.3	633.9	636.3	627.2	629.5	626.0	623.5	622.0	622.5	.....	.....
28	623.0	624.4	633.0	634.5	628.6	629.5	626.1	623.4	621.9	622.6	.....	.....
29	623.0	623.7	633.7	633.0	630.1	629.8	626.0	623.3	622.0	622.7	.....	.....
30	623.1	631.9	631.9	632.1	630.8	629.5	625.9	623.3	622.5	622.7	.....	.....
31	623.2	629.0	629.0	630.9	630.9	629.5	625.9	623.2	622.7	622.7	.....	.....

Missouri River.—Running Water, D. T., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1										790.9	790.9	.....
2										790.9	790.9	.....
3										790.8	790.8	.....
4										790.7	790.8	.....
5										790.7	790.7	.....
6										790.7	790.7	.....
7										790.7	790.7	.....
8										790.7	790.7	.....
9										790.7	790.7	.....
10										790.7	790.7	.....
11										790.7	790.7	.....
12										790.7	790.8	.....
13										790.7	790.7	.....
14										790.7	790.7	.....
15									792.1	790.7	790.6	.....
16									792.0	790.7	790.6	.....
17									791.7	790.7	790.6	.....
18									791.5	790.6	790.5	.....
19									791.2	790.6	790.5	.....
20									791.2	790.6	790.5	.....
21									791.2	790.6	790.5	.....
22									791.2	790.6	790.5	.....
23									791.1	790.6	790.5	.....
24									791.1	790.7	790.5	.....
25									790.9	790.7	790.5	.....
26									790.8	790.8	790.5	.....
27									790.8	790.8	790.5	.....
28									790.8	790.8	790.5	.....
29									790.9	790.8	790.5	.....
30									790.9	790.8	790.5	.....
31										791.0	790.5	.....

Missouri River.—Ft. Randall, D. T., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									826.4	825.0	824.8	.....
2									826.4	824.9	824.9	.....
3									826.4	824.8	824.8	.....
4									826.3	824.8	824.6	.....
5									826.4	824.7	824.6	.....
6									826.5	824.7	824.5	.....
7									826.5	824.7	824.4	.....
8									826.4	824.6	824.4	.....
9									826.5	824.6	824.4	.....
10									826.4	824.6	824.4	.....
11									826.5	824.6	824.4	.....
12									826.5	824.6	824.4	.....
13									826.3	824.5	824.4	.....
14									826.1	824.5	824.3	.....
15									825.9	824.5	824.1	.....
16									825.6	824.5	824.0	.....
17									825.4	824.4	823.7	.....
18									825.3	824.4	823.4	.....
19									825.3	824.3	823.3	.....
20									825.2	824.3	824.4	.....
21									825.2	824.4	824.3	.....
22									825.1	824.4	824.1	.....
23									825.1	824.4	824.0	.....
24									825.0	824.5	823.7	.....
25									825.0	824.6	823.4	.....
26									825.0	824.6	823.3	.....
27									825.1	824.7	.....	.....
28									825.0	824.9	.....	.....
29									825.1	824.9	.....	.....
30									825.0	824.9	.....	.....
31									825.0	824.8	.....	.....

Missouri River.—Fort Randall, D. T., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									826.6	824.8	825.0	822.9
2									826.5	824.8	825.0	822.9
3									826.4	825.0	824.9	.....
4									826.3	825.2	824.9	.....
5									826.2	825.4	824.9	.....
6									826.1	825.8	824.9	.....
7									826.0	825.8	824.9	.....
8									826.0	825.7	824.9	.....
9									825.9	825.6	824.8	.....
10									825.8	825.6	824.8	.....
11									825.6	825.5	824.8	.....
12									825.6	825.6	824.7	.....
13									825.5	825.6	824.7	.....
14									825.5	825.7	824.4	.....
15									825.4	825.8	824.4	.....
16									825.3	825.8	824.1	.....
17									825.2	825.9	824.1	.....
18									825.2	826.1	823.9	.....
19									825.1	826.2	823.8	.....
20									825.1	826.3	823.6	.....
21									825.1	826.2	823.5	.....
22									825.1	826.1	823.4	.....
23									825.0	825.9	823.4	.....
24									825.0	825.7	823.4	.....
25									824.9	825.6	823.3	.....
26									824.8	825.5	823.3	.....
27									824.8	825.4	823.3	.....
28									824.8	825.2	823.2	.....
29									824.7	825.1	823.1	.....
30									824.8	825.1	823.0	.....
31								826.7	.....	825.1	.....	.....

Missouri River.—Bijou Hills, D. T., 1882.

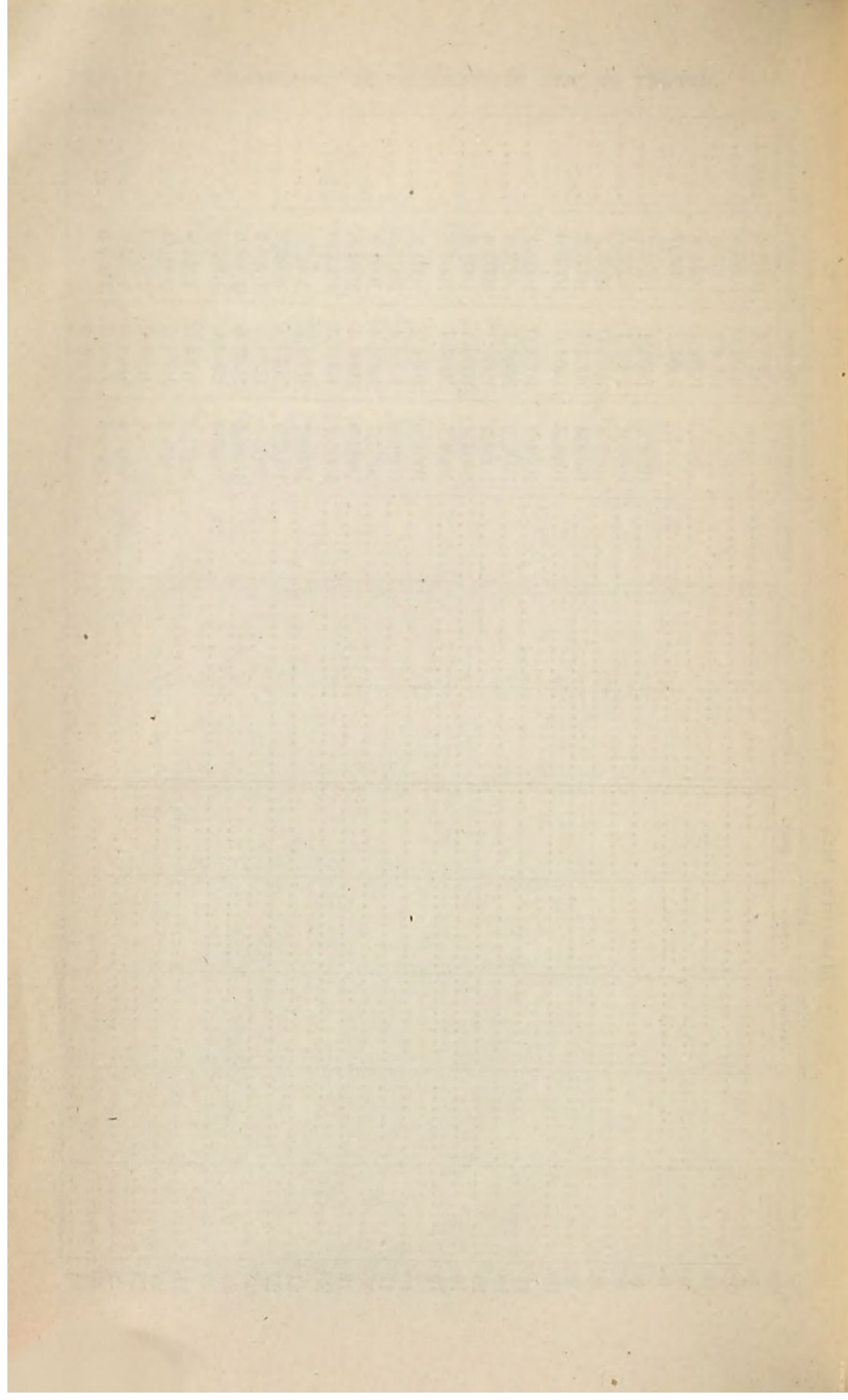
Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									872.6	870.9	871.5	.....
2									872.6	871.1	871.5	.....
3									872.4	871.3	871.5	.....
4									872.3	871.5	871.4	.....
5									872.2	871.7	871.4	.....
6									872.1	871.9	871.5	.....
7									872.0	871.7	871.5	.....
8									871.9	871.6	871.4	.....
9									871.9	871.6	871.4	.....
10									871.8	871.6	871.4	.....
11									871.7	871.5	871.4	.....
12									871.6	871.6	871.3	.....
13									871.6	871.7	871.0	.....
14									871.6	871.8	871.0	.....
15									871.5	871.9	870.7	.....
16									871.4	872.0	870.0	.....
17									871.3	872.1	869.8	.....
18									871.3	872.3	869.7	.....
19									871.2	872.4	869.6	.....
20									871.2	872.5	869.6	.....
21									871.2	872.5	869.6	.....
22									871.1	872.2	869.6	.....
23									871.0	872.0	869.6	.....
24									871.0	871.9	869.5	.....
25									870.9	871.8	869.8	.....
26									870.9	871.8	869.6	.....
27									870.9	871.6	869.3	.....
28									870.9	871.6	869.3	.....
29									870.9	871.6	868.5	.....
30									870.9	871.5	868.1	.....
31									870.9	871.5	868.1	.....

Missouri River.—Chamberlain, D. T., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1										912.7	913.0	.....
2										912.8	913.1	.....
3									913.9	913.1	913.2	.....
4									913.8	913.1	913.2	.....
5									913.6	913.3	913.2	.....
6									913.6	913.2	913.2	.....
7									913.5	913.2	913.1	.....
8									913.5	913.2	913.1	.....
9									913.4	913.1	913.0	.....
10									913.4	913.2	913.0	.....
11									913.3	913.2	912.9	.....
12									913.3	913.3	912.8	.....
13									913.2	913.3	913.4	.....
14									913.2	913.5	913.5	.....
15									913.1	913.5	912.8	.....
16									913.1	913.7	912.5	.....
17									913.0	913.7	912.4	.....
18									913.0	913.9	912.2	.....
19									912.9	914.0	911.8	.....
20									912.9	914.0	911.7	.....
21									912.8	913.9	911.6	.....
22									912.8	913.7	911.5	.....
23									912.8	913.6	911.8	.....
24									912.7	913.5	912.0	.....
25									912.7	913.5	911.9	.....
26									912.6	913.4	911.8	.....
27									912.6	913.3	911.9	.....
28									912.6	913.3	911.5	.....
29									612.6	913.3	911.4	.....
30									912.6	913.2	911.3	.....
31									912.6	913.1	.....	.....

Missouri River.—Ft. Pierre, D. T., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1										1003.8	1003.9	1003.1
2										1004.0	1003.8	.....
3										1004.2	1003.8	.....
4										1004.1	1003.8	.....
5										1004.1	1003.7	.....
6									1004.6	1004.1	1003.7	.....
7									1004.4	1004.1	1003.6	.....
8									1004.4	1004.0	1003.7	.....
9									1004.4	1004.1	1003.6	.....
10									1004.3	1004.0	1003.6	.....
11									1004.3	1004.0	1003.5	.....
12									1004.2	1004.1	1003.5	.....
13									1004.2	1004.1	1002.4	.....
14									1004.1	1004.1	1001.9	.....
15									1004.1	1004.1	1001.8	.....
16									1004.0	1004.2	1001.7	.....
17									1003.8	1004.4	1001.8	.....
18									1003.8	1004.4	1001.8	.....
19									1003.8	1004.4	1001.8	.....
20									1003.7	1004.3	1001.8	.....
21									1003.7	1004.3	1002.1	.....
22									1003.6	1004.1	1002.2	.....
23									1003.5	1004.1	1002.1	.....
24									1003.5	1004.0	1002.0	.....
25									1003.4	1004.0	1002.0	.....
26									1003.3	1004.0	1001.8	.....
27									1003.4	1004.0	1001.4	.....
28									1003.4	1004.0	1001.0	.....
29									1003.4	1004.0	1000.8	.....
30									1003.6	1004.0	1002.5	.....
31										1003.9	.....	.....



REGULAR GAUGE READINGS.

Missouri River.—St. Charles, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									10.92	8.82	7.07	7.27
2									10.72	8.87	6.97	7.42
3									10.42	8.72	6.97	7.37
4									10.17	8.52	6.97	7.37
5									10.12	8.37	7.07	7.37
6									9.92	8.22	7.07	7.27
7									9.82	8.17	7.17	7.27
8									9.72	8.07	7.17	7.27
9									10.12	8.12	7.07	7.27
10									9.77	8.12	7.12	7.27
11									9.57	8.02	7.17	7.22
12									9.47	7.87	7.17	7.17
13									9.52	7.77	7.12	7.17
14									9.67	7.67	7.07	7.07
15									9.82	7.67	7.27	6.92
16									10.12	7.77	7.17	6.57
17									10.07	7.82	7.17	5.97
18									9.87	7.62	7.17	5.42
19									9.72	7.42	7.27	5.17
20									9.57	7.32	7.37	5.02
21									9.47	7.27	7.37	4.82
22								14.17	9.42	7.37	7.47	4.52
23								15.17	9.22	7.37	7.47	4.37
24								14.22	9.12	7.32	7.37	4.02
25								12.97	8.97	7.22	7.47	3.72
26								12.29	8.92	7.17	7.47	4.12
27								12.09	8.87	7.17	7.37	6.07
28								12.40	8.82	7.17	7.27	6.32
29								11.67	8.77	7.22	7.22	6.92
30								11.37	8.67	7.12	7.17	6.92
31								11.14		7.07		6.87

Missouri River.—St. Charles, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	6.87	7.92	6.57	8.22	11.57	13.24	22.95	15.76	9.40	6.74	6.17	9.48
2	6.12	8.42	6.52	10.32	11.50	13.24	23.25	15.52	9.23	6.65	6.07	10.00
3	5.87	7.87	6.42	11.52	11.37	14.25	23.34	15.76	9.10	6.79	6.00	10.92
4	5.47	7.82	6.22	11.67	11.32	14.87	22.95	15.89	8.93	7.04	6.00	11.22
5	6.37	8.07	6.07	11.39	11.32	14.87	22.30	15.84	8.80	6.84	5.95	10.92
6	6.22	7.92	6.07	11.25	11.34	15.04	21.65	16.16	8.70	6.74	5.95	10.34
7	6.12	7.47	6.27	11.64	11.67	15.74	21.56	16.21	8.65	6.84	5.95	9.88
8	6.52	7.37	6.57	12.06	12.26	16.31	21.36	15.79	8.48	6.77	5.97	9.65
9	6.77	7.17	6.82	12.26	12.44	16.26	21.11	15.16	8.34	6.67	6.17	10.92
10	6.87	7.17	7.17	15.20	12.64	15.96	20.71	14.80	8.26	6.57	6.25	12.53
11	6.87	7.27	7.72	17.55	12.84	15.74	20.41	14.37	8.49	6.55	6.27	13.90
12	6.87	7.42	8.02	18.00	12.76	16.04	19.72	13.87	8.85	6.77	6.45	14.25
13	6.87	8.42	7.92	18.52	12.56	16.41	19.19	13.57	8.68	6.77	6.62	13.82
14	6.92	8.17	7.82	18.65	12.44	16.31	18.62	13.31	8.55	6.94	7.12	12.81
15	6.97	7.82	8.87	18.22	12.56	16.86	18.37	12.98	8.45	6.87	8.71	11.69
16	6.87	7.52	9.42	17.33	12.66	17.33	18.00	12.64	8.50	6.81	12.36	10.42
17	6.77	6.87	9.27	16.37	12.54	17.11	17.60	12.34	8.63	6.72	15.00	9.37
18	6.77	6.52	9.32	15.54	12.44	17.68	17.08	12.01	8.53	6.55	15.14	8.21
19	6.82	6.22	9.62	14.75	12.39	18.37	16.73	11.76	8.33	6.35	14.70	7.27
20	6.77	6.07	9.72	14.12	12.24	19.12	16.66	11.60	7.97	6.57	13.87	6.00
21	6.77	6.32	9.67	13.62	12.29	19.77	16.46	11.37	7.67	6.62	12.96	5.37
22	6.92	6.62	9.42	13.17	12.51	19.97	16.29	11.22	7.41	6.84	12.18	5.10
23	7.27	6.82	9.12	12.83	12.56	19.60	15.99	11.00	7.39	7.09	10.70	4.78
24	7.62	6.87	8.82	12.53	12.41	20.11	16.69	10.57	7.31	7.24	10.40	4.58
25	8.07	7.12	8.52	12.26	12.29	19.22	17.11	10.52	7.21	7.09	10.34	4.01
26	8.47	7.37	8.22	12.11	12.24	19.69	17.78	10.34	7.24	6.89	10.43	3.15
27	8.97	7.12	8.07	11.96	12.34	20.59	18.13	10.22	6.99	6.67	10.37	3.25
28	8.12	6.77	8.12	11.81	12.51	21.41	16.98	10.00	6.97	6.45	10.03	3.20
29	7.42		8.17	11.86	12.71	22.75	16.37	9.88	6.84	6.35	9.90	3.81
30	7.92		8.02	11.62	13.01	23.05	16.24	9.63	6.84	6.25	9.80	4.56
31	7.92		7.72		13.26		15.89	9.48		6.22		4.88

Missouri River.—St. Charles, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	4.92	6.74	10.15	12.61	12.01	13.08	16.29	15.79	13.85	9.30	7.69	3.86
2	5.50	6.79	10.37	12.33	11.61	13.67	16.52	14.95	14.15	9.20	7.69	3.76
3	6.70	7.21	10.62	11.47	11.17	13.57	17.23	14.77	15.30	9.28	7.59	3.99
4	8.21	7.72	10.67	11.40	10.54	13.36	18.17	14.60	15.47	9.43	7.47	4.29
5	8.09	7.71	10.37	11.22	10.22	15.54	19.12	14.40	14.35	9.38	7.37	4.46
6	9.75	7.17	9.88	11.54	10.08	15.67	19.27	14.30	14.30	9.35	7.37	4.64
7	12.01	6.81	9.18	12.51	9.98	14.07	19.32	14.10	14.95	9.55	7.07	4.94
8	13.28	6.72	8.65	13.04	9.95	14.20	19.35	14.42	15.74	9.45	6.97	4.57
9	14.27	6.60	8.31	12.71	10.40	14.65	19.40	14.42	16.09	9.13	6.97	4.31
10	14.57	6.42	8.44	16.14	10.35	15.59	19.57	14.32	15.45	8.88	7.14	4.34
11	14.45	6.35	9.08	17.20	11.72	15.67	19.80	14.22	14.25	8.68	7.01	3.91
12	13.75	6.25	9.51	16.51	12.26	14.95	19.90	14.05	13.90	8.44	7.01	3.27
13	12.66	6.27	9.53	15.10	10.87	14.45	19.92	13.97	13.16	8.14	7.19	3.32
14	11.49	6.50	9.26	14.25	10.22	14.25	19.94	13.85	12.66	7.89	7.36	3.77
15	10.64	7.17	8.98	13.77	9.93	13.85	19.94	13.72	11.62	7.79	....	4.01
16	10.02	7.61	8.85	13.31	9.78	13.45	19.82	13.23	10.92	7.87	....	4.31
17	9.58	8.81	8.83	12.76	9.68	13.18	19.47	13.08	14.30	7.92	....	4.36
18	9.23	9.23	8.78	12.43	9.51	13.21	19.42	12.71	12.76	7.84	7.51	5.22
19	8.65	9.23	8.71	12.43	9.41	13.50	19.27	12.36	10.87	7.99	7.37	5.60
20	8.16	9.08	8.44	12.71	9.46	14.57	18.92	12.01	10.57	7.89	7.29	5.90
21	7.77	8.78	7.96	12.53	9.81	16.11	18.82	11.76	10.15	7.99	7.39	5.92
22	7.49	8.60	7.57	12.23	9.73	15.94	18.67	11.57	9.80	8.34	6.30	5.30
23	7.37	8.58	7.29	12.01	9.36	16.09	18.72	11.40	9.65	8.73	5.60	4.06
24	7.27	8.50	7.09	11.86	9.06	16.44	18.62	11.27	9.50	8.83	4.61	4.66
25	7.19	8.61	6.99	11.81	8.76	18.03	18.52	11.17	9.40	8.63	4.51	4.66
26	7.14	9.25	7.04	11.81	8.68	17.71	18.50	11.27	9.30	8.39	4.46	4.51
27	7.14	9.83	7.09	11.76	9.06	17.45	18.03	11.47	9.23	8.19	4.16	4.51
28	7.14	9.78	7.09	12.03	9.13	16.54	17.25	11.67	9.28	7.99	3.94	4.19
29	7.07	9.86	7.11	12.38	9.81	16.47	16.39	12.38	9.43	7.89	3.94	3.76
30	6.89		9.33	12.43	10.82	16.39	16.04	12.91	9.43	7.69	3.94	4.46
31	6.77		11.67		12.01		15.81	13.38		7.54		5.52

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	5.72	6.60	14.93	21.93	25.60	15.78	18.38	12.63	8.03	10.03	11.78	9.83
2	5.92	6.62	15.40	21.43	26.78	15.88	19.78	12.45	7.98	11.58	11.48	9.68
3	6.10	6.65	15.80	21.08	27.83	16.73	19.83	12.33	7.98	13.58	11.38	9.73
4	6.05	6.55	15.70	21.33	28.33	17.98	19.78	12.18	7.98	13.73	11.38	9.98
5	6.32	6.60	15.60	20.48	28.38	18.58	19.78	12.03	7.93	12.43	11.28	10.00
6	6.37	6.62	15.38	19.68	27.98	18.50	19.33	11.88	7.98	12.23	11.13	9.85
7	6.35	6.91	15.28	20.45	26.73	18.08	18.53	11.73	7.88	12.33	10.93	9.80
8	6.42	7.34	14.93	21.38	24.13	17.83	17.88	11.58	7.88	12.63	10.83	9.73
9	6.67	15.52	14.23	21.43	21.63	17.78	17.23	11.33	7.83	12.83	10.73	9.50
10	7.21	19.29	13.60	21.28	20.33	17.38	16.58	11.18	7.75	12.83	10.53	9.13
11	7.74	18.23	13.30	21.40	19.78	16.98	16.08	11.18	7.78	13.28	10.43	9.08
12	7.99	17.75	14.18	21.88	19.83	17.48	15.63	11.13	7.78	13.68	10.63	9.05
13	8.07	17.14	17.18	22.38	19.98	18.18	15.33	10.83	7.88	13.58	11.53	9.03
14	7.81	15.51	18.13	22.75	19.48	18.48	15.30	10.58	7.88	13.33	13.78	9.70
15	7.77	15.15	18.33	22.93	18.83	17.78	16.08	10.43	7.93	12.53	15.58	11.23
16	7.71	14.25	18.33	23.08	18.28	17.53	16.53	10.28	8.43	11.58	15.70	10.88
17	7.49	13.10	19.18	23.30	18.03	17.58	16.48	10.18	9.08	11.78	15.53	10.70
18	7.34	12.51	20.73	21.98	17.85	17.88	16.33	10.18	8.95	12.68	16.58	10.55
19	7.37	10.77	20.53	20.93	17.63	19.28	16.18	10.03	8.75	13.98	20.48	10.23
20	7.27	11.04	20.33	20.38	17.43	19.98	15.98	9.83	8.53	14.98	19.33	10.00
21	7.07	10.82	19.63	20.43	17.23	19.78	15.63	9.68	8.38	15.83	18.28	9.73
22	6.94	10.72	18.95	20.98	16.88	19.18	15.18	9.58	8.38	15.88	17.43	10.03
23	6.81	10.42	18.43	22.03	16.88	18.68	14.78	9.58	8.38	15.98	16.53	11.23
24	6.74	11.34	18.45	22.85	17.60	18.45	14.48	9.38	8.38	16.23	15.73	12.38
25	6.67	11.30	18.88	23.33	18.33	18.43	14.28	9.13	8.38	16.35	14.68	13.03
26	6.62	11.03	18.95	23.58	18.43	18.13	14.08	8.93	8.28	16.33	13.38	13.08
27	6.50	11.81	18.48	23.78	18.00	17.88	13.83	8.78	8.18	15.88	12.45	12.83
28	6.50	13.88	18.23	24.00	17.38	18.10	13.38	8.53	7.88	14.63	11.63	12.28
29	6.52		18.18	24.33	16.83	17.73	13.03	8.23	7.63	13.48	10.88	11.68
30	6.57		18.38	24.70	16.33	17.78	12.83	8.15	7.68	12.73	10.23	11.18
31	6.60		20.68		16.08		12.78	8.08		12.18		10.68

Missouri River.—St. Charles, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	10.23	7.33	16.95	10.53	16.63	21.50	23.28	14.20	8.53	6.18	8.20	7.30
2	9.83	7.30	16.93	10.58	16.18	21.38	24.63	13.83	8.80	6.15	8.25	7.10
3	9.73	7.15	14.48	10.43	15.18	21.03	25.63	14.35	8.68	6.13	8.10	6.97
4	9.23	6.93	13.78	10.03	14.18	20.03	25.73	15.25	8.43	6.13	7.82	6.80
5	9.05	6.75	13.63	9.58	13.75	19.23	25.53	15.85	8.25	6.13	7.60	6.62
6	8.58	6.65	13.63	9.25	14.08	18.83	25.08	15.90	8.15	6.08	7.42	6.60
7	8.05	6.65	13.38	9.25	14.15	18.60	24.65	15.08	8.03	5.98	7.42	6.65
8	8.38	6.80	12.88	9.43	13.75	18.23	24.05	14.28	7.90	6.00	7.47	6.67
9	8.28	7.00	12.83	10.83	13.83	17.48	23.18	13.68	7.80	6.13	7.50	6.07
10	7.83	7.20	14.53	11.98	15.30	16.68	22.15	13.20	7.70	6.20	7.60	5.47
11	7.88	7.28	15.58	12.58	15.18	15.70	21.13	12.93	7.55	6.25	7.70	5.22
12	7.68	7.43	15.23	13.60	14.58	14.85	20.18	12.70	7.43	6.22	7.80	5.02
13	7.78	7.90	14.88	15.13	14.33	14.28	19.53	12.53	7.33	6.42	8.70	5.37
14	8.63	8.08	14.38	16.85	14.30	14.43	18.83	12.25	7.25	6.50	9.35	5.22
15	9.30	8.08	13.83	18.63	14.23	14.60	18.13	12.15	7.18	6.50	9.40	5.10
16	9.23	7.90	13.18	19.30	13.83	14.58	17.93	11.95	7.10	6.57	8.85	4.90
17	9.23	7.78	12.88	18.33	13.43	17.03	18.40	11.63	6.95	6.62	8.47	3.65
18	9.25	7.98	13.10	17.18	13.33	18.63	18.73	11.15	6.83	6.85	8.40	3.37
19	9.08	9.58	13.18	16.60	13.98	18.03	18.78	10.83	6.68	7.30	8.30	3.35
20	8.85	20.13	12.95	15.90	14.90	17.68	19.23	10.53	6.68	7.80	8.30	4.10
21	8.45	24.18	12.53	15.23	14.93	18.65	19.68	10.23	6.73	7.85	8.27	4.90
22	7.88	22.58	12.63	14.93	14.28	20.65	19.20	9.93	6.88	7.65	8.10	5.87
23	7.43	21.55	12.48	16.48	13.68	21.23	18.40	9.73	6.93	7.50	7.90	6.10
24	7.10	20.88	12.45	17.73	13.53	21.35	17.58	9.53	6.80	7.47	7.62	6.55
25	6.93	20.15	12.48	17.23	14.93	21.08	16.83	9.38	6.45	7.37	7.52	6.70
26	6.93	19.53	12.08	16.98	16.83	20.83	16.13	9.40	6.30	7.27	7.47	6.70
27	7.08	18.33	11.48	16.83	16.98	21.23	15.48	9.33	6.20	7.15	7.42	6.57
28	7.28	17.28	10.88	16.68	20.13	22.08	14.98	9.08	6.13	7.17	7.35	6.37
29	7.70		10.53	16.70	21.18	22.55	14.60	8.85	6.18	7.20	7.45	6.22
30	7.85		10.43	16.73	21.05	22.88	14.73	8.75	6.18	7.35	7.42	6.12
31	7.75		10.45		21.28		14.58	8.55		8.17		

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	5.82	8.47	17.67	13.45	12.50	19.60	27.47	16.71	11.52	7.45	11.96	9.15
2	5.72	8.45	17.05	12.90	12.45	19.25	26.95	18.96	11.21	7.63	11.57	8.76
3	5.67	8.75	16.32	12.37	12.12	19.05	26.17	17.94	11.01	7.92	11.28	8.62
4	5.72	8.65	15.10	11.95	11.75	18.62	25.03	16.69	10.79	7.77	10.86	8.43
5	4.70	8.75	13.90	11.65	11.60	18.32	23.67	15.90	10.54	7.69	10.42	8.23
6	4.20	8.65	13.50	11.62	11.50	18.92	22.41	15.33	10.29	8.02	10.24	7.90
7	4.10	8.52	14.40	11.92	11.42	20.40	21.35	14.83	10.02	8.30	10.04	7.88
8	4.00	8.52	14.45	12.15	11.35	21.09	20.73	14.63	9.84	8.24	10.14	7.80
9	3.92	8.70	14.55	12.10	11.30	21.12	20.24	14.28	9.63	8.20	11.18	7.89
10	3.35	8.70	14.15	12.15	11.05	21.25	20.32	13.98	9.39	8.43	12.78	8.41
11	3.55	8.60	13.22	12.70*	10.92	21.58	20.63	13.39	9.21	8.58	13.33	8.84
12	6.25	8.47	12.52	13.10	10.92	21.71	20.64	12.06	9.07	9.50	13.18	9.00
13	6.65	8.27	11.87	12.87	10.80	22.74	20.56	12.86	8.92	9.66	12.73	9.08
14	6.27	10.32	11.77	12.62	11.17	22.20	20.96	12.82	8.76	9.00	12.16	8.63
15	6.92	15.10	12.80	12.35	12.27	24.46	21.86	12.84	8.60	8.50	11.43	8.42
16	7.25	19.70	12.90	12.07	14.12	25.30	22.41	12.85	8.41	8.27	10.90	8.40
17	7.67	22.30	12.10	11.80	15.65	25.68	22.53	13.07	8.17	8.14	10.43	8.28
18	7.50	24.05	11.60	11.77	16.60	26.72	22.16	14.06	8.12	8.44	10.05	8.28
19	7.90	23.00	11.85	12.30	18.75	27.37	21.45	13.94	8.05	8.73	9.70	8.22
20	7.15	19.90	12.27	13.30	19.70	27.92	20.57	13.35	8.04	9.70	9.33	8.09
21	7.25	19.27	12.27	15.20	19.80	28.58	20.54	13.00	7.98	9.97	9.35	7.90
22	7.52	18.72	12.15	16.42	20.12	29.09	20.18	13.03	7.84	10.40	10.35	7.57
23	7.12	17.87	12.35	17.25	19.72	29.59	19.02	13.80	7.74	10.53	10.74	7.27
24	7.10	17.45	12.42	16.42	19.17	29.97	18.06	14.36	7.65	10.65	10.05	7.04
25	7.47	18.30	12.20	15.35	18.65	29.92	17.63	14.00	7.61	10.70	9.83	6.62
26	7.65	18.05	12.15	14.50	18.67	29.58	17.66	13.79	7.60	10.38	10.04	6.50
27	8.00	18.00	11.72	13.85	18.90	29.05	17.70	13.47	7.54	9.82	9.70	6.40
28	8.10	17.45	11.02	13.35	20.00	28.55	16.44	13.08	7.50	9.86	9.63	6.29
29	8.12		10.77	12.97	21.22	28.20	16.07	12.56	7.48	10.62	9.43	6.07
30	8.27		12.82	12.70	21.10	27.80	15.49	12.16	7.45	11.85	9.35	6.00
31	8.55		13.77		20.20		15.63	11.81		12.00		5.97

*Zero corrected. Correct gauge reads 0'.6 higher.

Missouri River.—St. Charles, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	5.87	9.72	10.60	18.75	16.42	14.35	19.77	17.82	13.22	18.75	12.40	11.52
2	5.45	9.77	10.20	19.02	17.65	14.57	19.25	17.40	13.67	19.37	12.05	10.82
3	4.36	10.45	10.10	18.40	18.35	15.45	18.72	17.20	14.20	17.62	11.80	10.10
4	3.65	11.47	9.75	18.17	19.30	15.85	18.50	17.20	14.15	16.52	11.60	9.60
5	4.65	14.22	9.27	18.72	20.32	15.95	18.35	16.95	13.55	15.62	11.55	9.32
6	5.01	15.35	8.65	18.90	21.25	16.20	18.67	16.30	13.00	15.07	12.35	9.12
7	4.85	14.73	8.35	19.15	21.00	16.70	19.20	15.72	12.55	14.95	11.67	9.25
8	4.92	14.00	6.80	20.57	20.90	16.90	19.55	15.22	12.20	14.90	11.20	9.72
9	5.17	13.07	7.57	21.42	20.30	17.32	19.65	14.62	12.10	14.65	11.05	10.80
10	5.62	12.17	7.80	21.65	19.70	18.32	19.32	14.15	11.95	14.85	10.77	11.45
11	5.95	11.35	8.47	21.65	19.25	19.05	18.87	13.75	11.62	15.17	10.55	12.15
12	6.62	11.12	10.50	21.40	19.25	19.20	18.42	13.40	11.42	15.30	10.32	13.20
13	6.92	13.07	8.90	20.62	18.82	19.20	18.37	13.12	11.47	15.30	10.25	13.82
14	7.20	14.37	8.95	19.45	17.85	18.85	18.20	12.82	11.87	15.07	10.17	13.72
15	7.55	14.10	9.10	18.87	16.82	18.42	18.80	12.60	11.55	14.57	10.10	13.55
16	7.91	14.32	9.45	18.17	16.00	18.20	20.95	12.40	10.95	14.07	10.10	13.27
17	8.50	15.07	10.10	17.45	15.70	18.07	21.40	12.20	10.90	13.70	10.02	12.97
18	9.05	15.40	11.12	16.82	15.65	18.07	20.65	12.25	10.90	13.47	9.90	12.07
19	9.05	15.32	13.70	16.55	15.60	18.40	19.50	12.45	10.60	13.25	9.75	10.98
20	9.05	14.48	13.70	16.87	15.85	19.20	18.40	12.75	10.45	12.90	9.72	9.37
21	9.05	13.80	14.15	16.25	15.72	19.80	17.62	13.35	10.40	12.52	9.67	7.95
22	9.10	13.87	14.55	16.47	15.05	20.15	16.85	13.20	10.55	12.27	9.60	7.80
23	9.15	14.00	14.47	17.95	14.67	20.17	16.47	12.67	10.70	12.15	10.05	7.55
24	9.17	13.67	14.90	19.17	14.47	20.15	16.42	12.30	10.60	14.00	11.95	7.25
25	9.27	13.35	16.02	19.55	14.20	20.67	16.50	12.30	10.32	14.10	12.62	7.00
26	9.55	12.62	17.50	19.37	13.92	20.80	16.50	12.42	13.15	13.60	12.35	6.80
27	9.95	11.97	19.52	18.70	13.95	20.90	17.10	12.85	14.70	13.37	12.35	6.87
28	9.47	11.47	21.30	18.05	14.32	20.85	17.55	13.65	15.95	13.12	12.55	6.65
29	9.30	11.16	20.75	17.27	14.62	20.62	17.55	14.07	17.72	13.00	12.52	10.97
30	9.15		19.40	16.42	14.75	20.15	17.45	13.65	18.00	13.07	12.12	15.50
31	9.72		18.92		14.57		17.92	13.32		12.83		16.47

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	17.20	9.45	10.15	14.80	21.30	17.48	20.70	16.77	12.50	11.15	10.15	9.35
2	17.63	9.45	10.65	14.65	22.10	17.20	19.97	16.60	12.72	11.00	10.32	9.30
3	17.53	9.55	11.00	15.45	21.95	17.05	19.25	16.27	13.02	10.87	10.22	9.22
4	16.70	12.80	11.65	16.60	21.40	17.10	18.80	16.12	13.72	10.85	10.00	9.12
5	15.67	14.45	12.95	19.10	21.00	17.10	18.57	16.82	14.80	10.67	9.97	9.02
6	14.65	14.30	14.55	18.55	20.15	17.15	18.62	15.80	15.10	10.42	10.02	8.98
7	14.32	15.35	16.40	17.95	19.40	17.23	19.37	16.25	14.57	10.10	10.12	8.93
8	14.12	16.05	17.45	17.50	18.65	17.52	19.83	15.50	17.17	9.90	10.85	8.83
9	14.03	15.90	17.10	17.10	18.25	18.33	20.08	15.17	18.85	9.82	11.55	8.62
10	14.02	16.10	17.20	17.00	18.10	18.45	20.20	15.00	18.85	9.72	11.55	8.37
11	14.05	16.35	17.80	16.90	17.35	18.05	19.85	14.90	19.10	9.62	11.02	8.05
12	13.90	15.80	18.90	16.85	16.30	17.85	19.50	15.05	18.70	9.55	10.35	7.00
13	13.62	15.15	19.20	16.45	15.65	18.33	19.25	15.27	18.52	9.55	10.00	6.90
14	13.42	14.10	18.95	15.90	15.00	20.75	19.17	16.97	20.55	9.45	10.00	6.65
15	13.17	13.25	20.70	15.40	14.50	22.60	19.40	17.30	20.12	9.20	9.97	6.05
16	13.00	13.05	21.15	15.15	13.95	24.22	19.77	16.25	19.37	9.20	9.90	5.12
17	12.87	12.25	19.75	15.65	13.65	23.75	19.87	15.42	18.95	9.15	9.87	4.87
18	12.83	11.85	19.35	16.35	13.45	23.10	19.52	14.87	18.57	9.12	9.85	4.70
19	12.65	11.25	19.15	16.85	13.75	22.90	18.72	14.50	18.22	9.10	9.85	5.07
20	11.82	10.85	18.85	16.45	14.20	22.85	18.25	13.97	17.45	9.12	9.83	5.22
21	10.77	10.30	18.25	15.95	14.80	24.07	17.58	13.40	16.45	9.27	9.73	5.45
22	10.50	10.10	17.85	15.40	15.35	24.27	17.27	13.12	15.50	9.45	9.65	5.65
23	10.22	10.00	17.10	15.75	15.95	23.97	17.05	13.20	14.85	10.25	9.60	6.35
24	9.00	9.75	16.45	19.40	16.05	23.65	16.72	12.82	14.10	10.47	9.60	8.07
25	9.30	9.65	15.80	20.35	15.85	23.22	16.57	12.65	13.25	10.13	9.55	9.33
26	9.90	9.65	15.20	20.90	15.60	22.95	16.75	12.60	12.47	9.83	9.55	8.10
27	9.75	9.85	14.70	21.30	15.75	22.87	17.17	12.32	11.90	9.73	9.50	8.25
28	9.35	9.95	14.45	22.00	16.40	22.65	16.90	12.10	11.52	9.68	9.43	8.83
29	9.00		15.05	21.95	17.55	22.00	16.90	12.07	11.37	9.60	9.40	8.45
30	8.57		15.40	21.35	18.83	21.40	16.88	12.10	11.27	9.63	9.40	8.27
31	9.37		15.05		18.33		16.80	12.30		9.90		8.65

Missouri River.—Hermann, Mo., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					77.58	81.49	.....	.....	.....	72.91	71.82	72.00
2					77.24	81.16	.....	.....	.....	72.83	71.82	72.00
3					77.24	81.41	.....	.....	.....	72.83	71.82	72.49
4					77.49	82.08	.....	.....	.....	73.33	71.82	73.33
5					77.58	82.58	.....	.....	.....	73.58	71.82	72.66
6					77.49	82.33	.....	.....	.....	73.16	71.74	72.49
7					77.58	82.41	.....	.....	.....	73.08	71.74	72.24
8					77.74	83.00	.....	.....	.....	72.91	71.74	71.82
9					77.91	83.33	.....	.....	.....	72.83	71.66	72.74
10					78.08	83.66	.....	.....	.....	72.74	71.58	72.83
11					79.74	82.58	.....	.....	.....	72.66	71.66	74.08
12					79.66	82.49	.....	.....	.....	72.58	71.66	75.83
13					79.08	82.74	.....	.....	.....	72.49	71.58	77.41
14					79.24	82.58	.....	.....	.....	72.41	71.49	77.91
15					79.00	82.49	.....	.....	.....	72.33	71.49	77.91
16					78.66	82.33	.....	.....	.....	72.24	71.49	77.66
17					78.08	82.00	.....	.....	.....	72.33	71.49	77.24
18					77.33	81.91	.....	.....	.....	72.41	71.49	76.66
19					76.91	81.66	.....	.....	.....	72.58	71.41	76.08
20					77.33	81.66	.....	.....	.....	72.33	71.41	75.41
21					77.00	81.83	.....	.....	.....	72.24	71.33	74.33
22					76.83	81.83	.....	.....	.....	72.24	71.33	73.58
23					76.91	81.91	.....	.....	.....	72.16	71.33	72.91
24				76.91	78.74	81.91	.....	.....	.....	72.00	71.41	72.49
25				76.83	79.24	81.83	.....	.....	.....	71.91	71.41	72.08
26				76.83	80.83	82.24	.....	.....	.....	71.82	71.41	71.74
27				76.83	82.33	83.08	.....	.....	.....	71.82	71.41	71.66
28				76.91	82.41	83.24	.....	.....	.....	71.82	71.49	71.41
29				77.33	82.41	83.00	.....	.....	.....	71.91	71.66	71.24
30				77.66	83.33	82.91	.....	.....	73.58	71.91	71.82	71.16
31					82.33	.....	.....	.....	.....	71.91	.....	70.99

Missouri River.—Hermann, Mo., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	70.99	75.66	74.58	80.66	79.83	77.16	80.74	77.24	76.91	75.49	73.58	73.41
2	70.82	75.24	74.49	80.66	79.00	77.00	80.58	77.16	76.58	75.49	73.49	73.41
3	70.66	74.66	74.49	80.91	78.49	76.83	80.41	77.00	76.16	75.49	73.49	73.33
4	70.68	74.58	75.00	80.74	79.00	76.74	80.41	76.83	75.91	75.41	73.41	73.24
5	70.49	74.16	75.24	80.41	79.74	76.66	80.58	76.83	75.66	75.33	73.41	73.08
6	71.24	73.83	76.66	79.91	79.66	76.49	80.33	76.66	75.58	75.16	73.49	73.00
7	71.08	73.41	77.41	79.24	79.08	76.33	80.16	76.58	75.41	74.91	73.49	72.83
8	71.08	73.16	77.58	79.33	78.58	77.16	80.41	76.49	75.33	74.66	73.49	72.74
9	70.91	72.91	77.41	79.08	77.83	80.41	80.74	76.33	75.16	74.41	73.58	72.83
10	70.41	72.66	77.16	79.00	77.41	82.00	81.00	76.24	75.00	74.24	73.74	72.83
11	70.08	72.49	76.83	79.16	77.49	82.74	81.24	76.16	74.91	74.00	73.74	72.74
12	70.16	72.33	76.58	79.16	77.41	82.83	81.33	76.08	74.83	74.00	73.74	72.74
13	70.24	74.58	76.33	78.91	77.24	82.66	80.83	76.08	74.66	73.83	73.74	72.91
14	70.74	75.41	76.00	78.33	77.41	82.49	80.16	75.91	74.66	73.74	73.74	72.91
15	71.16	75.41	75.74	77.91	78.49	82.74	79.49	75.83	74.66	73.74	73.74	72.91
16	71.41	75.74	75.41	77.58	79.16	83.24	79.16	75.66	74.66	73.66	73.74	73.08
17	70.66	75.66	75.16	77.74	78.91	83.49	78.83	75.66	74.74	73.66	73.66	73.16
18	70.24	75.49	74.91	78.00	78.16	83.91	78.66	75.74	74.91	73.49	73.66	73.24
19	70.08	75.33	74.91	78.16	77.58	84.33	78.41	75.74	74.91	73.58	73.66	73.33
20	69.99	75.00	74.74	80.66	77.33	84.24	78.16	75.66	75.16	73.49	73.66	73.16
21	69.91	74.83	74.58	81.66	77.08	84.00	78.00	75.66	75.08	73.41	73.74	73.16
22	71.74	75.24	75.08	82.24	76.83	83.74	77.91	75.49	75.24	73.58	73.74	72.91
23	76.91	75.41	75.83	82.58	76.74	83.41	77.91	75.49	75.41	73.58	73.83	72.74
24	76.91	75.74	76.91	82.49	76.58	83.00	77.91	75.41	76.24	73.58	73.83	72.58
25	77.41	75.83	77.33	82.08	76.58	82.58	77.74	75.24	76.83	73.58	73.83	72.49
26	76.91	75.74	77.66	81.58	76.58	82.16	77.66	75.24	76.91	73.58	73.74	72.24
27	76.66	75.08	77.74	81.83	77.58	81.66	77.66	75.08	76.66	73.58	73.58	72.08
28	76.58	74.41	77.49	81.49	78.58	81.33	77.66	75.33	76.33	73.66	73.41	71.91
29	76.24		77.08	81.08	78.24	81.16	77.74	75.16	75.91	73.66	73.41	72.00
30	76.16		76.58	80.58	77.83	80.91	77.74	75.66	75.66	73.66	73.33	71.91
31	75.91		76.91		77.49		77.49	76.91		73.58		71.91

Missouri River.—Hermann, Mo., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	72.91	.....	77.16	78.66	86.08	80.24	85.33	89.74	78.66	77.58	75.00	72.49
2	71.66	.....	76.66	78.74	86.00	80.74	85.33	89.24	79.33	77.41	75.00	72.33
3	71.58	.....	76.58	80.00	85.41	80.66	85.16	87.33	79.33	77.16	74.91	72.24
4	70.66	.....	75.66	80.24	85.08	80.58	84.74	87.00	79.33	77.00	74.91	72.41
5	70.24	.....	75.41	79.91	84.49	83.33	85.16	86.91	79.33	76.83	74.91	72.74
6	70.24	.....	74.91	79.49	83.91	83.66	86.33	86.08	79.58	76.66	74.91	72.83
7	70.41	.....	74.91	79.00	83.41	83.74	87.16	85.00	80.16	76.58	75.00	72.74
8	70.66	.....	74.58	78.91	82.58	83.58	87.41	84.66	80.66	76.49	75.00	72.74
9	70.66	.....	74.41	81.24	82.16	83.49	87.16	84.08	82.33	76.49	75.00	72.91
10	.....	.....	74.74	81.66	81.91	83.33	87.16	83.16	82.41	76.41	74.83	73.16
11	.....	.....	74.91	81.41	81.49	83.16	87.08	82.24	82.08	76.33	74.74	73.24
12	.....	.....	76.33	81.41	81.33	82.83	86.91	81.41	81.66	76.16	74.66	73.33
13	.....	.....	77.00	82.49	81.16	82.33	86.33	80.58	81.24	76.08	74.66	73.33
14	.....	.....	77.91	81.83	80.91	81.91	85.91	79.83	80.91	76.00	74.58	73.16
15	.....	.....	78.33	81.24	80.58	81.49	86.58	79.33	80.66	75.91	74.58	72.91
16	.....	.....	77.16	80.83	80.16	81.00	86.41	79.08	80.33	75.83	74.58	72.91
17	.....	.....	77.08	80.41	79.66	81.16	86.83	79.00	80.08	75.74	74.58	72.74
18	.....	.....	76.66	79.74	79.58	80.83	87.08	78.91	80.00	75.66	74.58	73.24
19	.....	.....	76.33	81.49	79.41	81.74	87.16	78.74	79.83	75.58	74.58	73.33
20	.....	.....	75.41	81.83	79.33	83.58	87.00	78.49	79.74	75.41	74.58	73.08
21	.....	71.16	74.91	81.24	79.91	83.33	85.66	78.16	79.66	75.41	74.49	73.00
22	.....	71.49	74.91	80.66	80.16	82.74	86.08	78.00	79.66	75.41	74.41	73.24
23	.....	72.08	75.00	80.16	80.41	83.16	85.49	77.83	79.66	75.33	74.33	73.74
24	.....	77.08	75.16	79.91	80.08	84.00	85.49	77.74	79.49	75.33	74.24	73.83
25	.....	77.91	75.16	79.91	80.00	84.16	85.33	77.49	79.16	75.24	74.08	73.66
26	.....	76.00	75.16	81.33	79.74	84.16	84.74	77.41	78.91	75.16	74.00	73.58
27	.....	75.33	75.41	83.08	79.91	84.41	83.74	77.33	78.58	75.16	73.66	73.83
28	.....	75.08	76.00	83.58	79.74	84.83	84.41	77.24	78.33	75.08	73.41	73.91
29	.....	.....	76.16	83.74	79.66	85.08	87.00	77.33	78.08	75.08	73.08	73.91
30	.....	.....	76.41	84.00	79.58	85.16	85.74	77.49	77.83	75.08	72.91	74.00
31	.....	.....	77.41	.....	79.74	87.16	87.16	77.91	.....	75.00	.....	74.16

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	74.33	79.08	74.74	83.83	84.24	79.58	85.58	80.16	80.00	77.91	76.08	73.83
2	74.33	78.83	74.58	83.66	84.41	79.91	85.58	79.91	78.74	77.49	76.41	73.58
3	76.74	77.41	74.41	83.74	83.74	79.91	85.74	79.66	78.08	77.33	76.58	73.08
4	78.66	76.16	74.16	84.33	83.24	80.00	86.74	79.58	77.91	77.24	76.58	73.08
5	79.24	75.00	74.08	84.58	83.41	80.49	89.91	79.33	77.74	77.08	76.74	72.58
6	79.41	74.74	74.00	84.41	83.91	81.33	90.66	79.00	81.33	77.08	77.41	72.08
7	79.24	74.58	73.91	84.08	88.16	82.08	88.74	78.83	81.16	76.83	78.24	71.33
8	79.00	74.41	73.83	83.74	89.91	81.83	87.24	78.66	80.91	76.58	78.33	71.24
9	78.41	74.33	73.74	83.33	89.41	81.41	86.41	78.41	81.33	76.41	78.16	70.99
10	77.74	74.91	74.49	82.83	89.16	82.00	86.00	78.33	81.74	76.24	77.66	70.99
11	77.00	75.74	76.41	82.24	89.00	82.41	85.91	78.33	81.74	76.16	77.33	71.08
12	76.58	76.74	76.58	81.74	88.16	82.33	85.66	78.33	81.83	76.00	77.00	71.24
13	76.16	76.74	77.16	82.16	87.24	82.83	86.24	78.41	82.08	75.91	76.91	71.41
14	75.91	76.91	77.33	83.83	86.24	83.66	85.58	78.58	82.33	75.74	76.41	71.41
15	75.49	76.66	77.41	84.91	85.24	84.33	86.08	78.83	82.66	75.66	76.33	71.41
16	75.41	76.41	78.41	85.33	84.49	85.49	86.66	78.66	82.58	75.49	76.16	.....
17	75.24	76.33	78.49	86.16	83.58	87.16	87.00	78.33	82.74	75.49	76.16	.....
18	74.91	76.16	78.33	86.41	82.49	87.16	86.83	78.49	82.58	75.33	76.08	.....
19	74.66	75.91	79.08	86.41	81.74	86.00	86.49	78.33	82.33	75.41	75.91	.....
20	74.49	75.74	79.41	86.16	80.83	85.41	85.83	79.00	81.83	75.41	75.83	.....
21	74.41	75.49	79.58	85.49	80.74	85.16	84.33	79.41	81.41	75.41	75.66	.....
22	74.74	75.16	79.41	85.08	80.33	85.08	83.49	79.91	80.58	75.16	75.49	.....
23	76.16	74.83	78.91	84.83	79.83	85.24	82.66	79.58	80.16	74.91	75.24	.....
24	75.91	74.58	79.16	84.66	79.16	85.24	82.16	79.49	79.74	74.83	75.00	.....
25	76.08	74.41	80.58	84.83	78.74	88.66	81.66	80.16	79.49	74.74	74.91	.....
26	76.83	74.58	80.33	84.91	78.58	88.00	81.49	80.83	79.24	74.74	74.74	.....
27	77.41	74.58	80.33	85.00	78.33	87.00	81.24	80.58	79.00	74.74	74.41	.....
28	78.08	74.66	81.91	84.33	78.16	86.08	80.91	80.16	78.83	74.74	74.08	.....
29	78.49	74.66	82.49	83.41	78.08	85.24	80.66	79.58	78.58	74.91	73.83	.....
30	78.33	74.66	83.16	83.24	78.16	85.33	80.58	79.33	78.24	75.24	74.16	.....
31	78.33		83.49		78.49		80.49	79.08		75.41		.....

Missouri River.—Hermann, Mo., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1		75.83	76.91	80.24	83.24	85.16	85.74	80.83	76.91	74.24	76.74	76.74
2		77.08	76.66	81.83	83.33	85.24	86.08	80.66	76.66	74.24	76.41	76.41
3		76.00	76.49	81.83	83.41	86.00	86.74	80.49	76.41	74.33	76.33	76.00
4		77.58	76.41	82.16	83.41	86.24	86.33	80.24	76.41	74.41	76.16	75.24
5		76.91	76.41	82.16	83.08	86.24	86.00	80.16	76.24	74.24	76.08	74.66
6		77.08	76.49	81.49	82.66	86.24	85.66	80.00	76.16	74.24	76.00	74.58
7		76.74	76.41	80.74	83.00	86.16	85.24	79.91	76.00	74.41	75.91	74.91
8		76.49	76.66	80.00	82.33	85.91	84.83	79.91	76.00	74.41	76.08	75.49
9		76.16	77.08	81.66	81.66	86.74	84.66	79.91	75.83	74.41	76.16	76.33
10		76.91	76.83	83.74	81.33	88.83	83.91	80.08	75.74	74.33	76.00	76.33
11		77.00	76.66	84.08	81.33	89.49	83.91	80.49	75.74	74.24	75.83	75.91
12		76.83	76.58	83.41	81.33	89.91	83.66	80.66	75.58	74.24	75.74	75.33
13		76.66	76.16	82.66	81.33	90.24	83.33	80.16	75.58	74.16	75.66	74.91
14		77.16	75.91	82.00	81.41	90.24	82.58	79.49	75.66	74.24	75.49	74.74
15		77.16	75.49	81.49	83.66	89.74	82.24	79.08	75.66	74.33	75.41	74.58
16		77.16	75.58	81.08	83.91	89.24	81.74	78.74	75.66	74.33	75.33	74.66
17		76.58	75.74	80.74	84.58	88.83	81.41	78.58	75.49	74.33	75.24	74.58
18		76.33	75.83	80.58	86.41	89.08	82.16	78.33	75.41	74.74	75.16	74.49
19		76.08	75.91	81.74	86.66	89.00	82.24	78.24	75.41	74.91	75.41	74.91
20		76.00	76.66	82.58	86.49	87.91	83.58	78.16	75.33	75.58	75.49	75.66
21		75.83	78.00	84.00	86.00	86.83	83.74	77.91	75.24	76.33	75.83	76.49
22		76.08	77.91	84.24	86.08	.....	83.41	77.66	75.08	76.83	75.83	77.74
23		76.58	77.83	84.16	86.74	.....	83.16	77.66	75.08	76.83	75.74	77.66
24		76.66	77.83	83.91	86.83	.....	83.00	77.49	74.91	77.16	75.91	77.83
25		76.49	77.66	84.16	86.74	85.08	83.00	77.58	74.83	77.66	76.83	78.66
26		76.33	77.66	84.41	86.08	86.58	82.83	77.49	74.66	78.41	78.91	79.66
27	75.16	76.83	78.58	84.41	85.33	86.33	82.49	77.41	74.66	78.16	79.24	79.83
28		77.24	78.83	83.74	84.66	86.58	82.08	77.58	74.58	78.49	78.74	79.66
29			78.83	83.33	83.83	86.24	81.49	77.41	74.49	77.91	77.83	79.16
30			78.91	83.16	83.49	85.91	81.24	77.24	74.33	77.24	77.00	79.66
31			79.16	83.16	84.41	85.91	81.16	77.08	74.33	76.91	77.00	80.49

Missouri River.—Hermann, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	80.41	78.49	80.00	76.58	83.91	86.16	85.91	84.58	77.08	75.66	74.24	74.41
2	80.00	78.49	80.49	76.91	83.83	86.16	85.83	84.00	76.91	75.58	74.16	74.41
3	79.49	78.16	81.00	79.24	83.49	86.16	85.83	83.58	76.91	75.33	74.16	74.16
4	78.74	77.74	80.91	80.24	83.24	86.16	86.16	83.49	76.74	75.16	74.16	74.24
5	78.24	77.33	80.74	79.91	83.24	85.91	86.24	83.00	76.66	75.16	74.16	74.24
6	77.33	76.91	80.66	79.49	83.41	85.08	86.24	82.41	76.49	75.08	74.16	74.08
7	75.83	76.58	80.33	79.08	83.49	84.24	86.08	81.91	76.49	75.08	74.33	73.91
8	75.00	76.41	79.91	79.08	83.24	84.24	86.33	81.74	76.41	75.08	74.16	74.08
9	74.08	76.08	79.83	79.08	82.49	84.91	85.83	81.49	76.41	75.00	74.08	74.00
10	73.66	75.91	85.16	79.00	82.16	85.33	85.24	81.24	76.33	75.00	74.24	73.91
11	73.49	76.08	85.41	79.00	81.41	85.58	84.91	80.91	76.33	74.91	74.33	73.83
12	73.41	76.58	84.41	79.08	81.00	85.74	84.66	80.83	76.33	74.74	74.24	73.49
13	73.74	77.83	83.91	79.24	80.49	86.00	84.49	80.83	76.41	74.66	74.08	73.49
14	73.91	78.49	83.49	79.24	80.49	85.83	84.66	80.58	76.49	74.66	74.00	73.49
15	74.08	78.58	82.58	79.74	80.49	85.74	84.74	80.49	76.83	74.74	74.08	70.82
16	74.16	78.58	81.41	80.16	80.41	85.58	84.41	80.41	76.74	74.66	74.24	67.91
17	74.66	78.66	80.66	80.41	80.33	85.74	84.00	80.08	76.66	74.58	74.24	67.91
18	75.58	78.91	80.00	80.16	80.33	84.83	83.49	79.74	76.41	74.33	74.33	67.66
19	75.74	79.24	79.24	80.91	82.74	84.16	83.24	79.58	76.24	74.33	74.33	67.91
20	75.91	79.24	78.91	80.58	84.41	84.08	82.66	79.16	76.24	74.33	74.41	67.24
21	75.91	80.33	78.58	80.83	84.74	83.91	82.66	79.33	76.16	74.41	74.33	66.91
22	75.83	82.16	78.33	80.83	84.49	83.91	82.58	80.41	76.08	74.41	74.41	66.91
23	76.08	82.49	78.08	83.58	84.33	84.08	82.49	80.00	75.91	74.33	74.66	.....
24	76.41	83.00	77.83	83.91	84.49	84.58	82.33	78.83	75.83	74.24	74.58	.....
25	76.41	82.74	77.74	83.83	84.24	84.74	82.16	78.33	75.74	74.16	74.49	.....
26	76.41	82.33	77.74	83.74	84.33	84.91	82.16	78.16	75.74	74.08	74.33	.....
27	77.74	81.58	77.08	83.91	84.33	85.16	82.08	78.00	75.58	74.00	74.24	.....
28	79.00	80.66	76.91	83.58	86.00	85.33	82.24	77.83	75.58	74.00	74.16	.....
29	78.91		76.74	83.66	86.16	85.49	84.24	77.58	75.58	74.08	74.16	.....
30	78.66		76.58	83.83	86.16	85.58	84.83	77.41	75.66	74.24	74.08	.....
31	78.49		76.66		86.08		84.83	77.24		74.33		.....

Missouri River.—Hermann, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	73.41	72.41	76.24	77.41	78.74	86.91	80.49	75.58	73.16	72.83	76.08
2	.....	73.33	72.24	77.41	77.41	79.66	87.00	80.66	75.49	73.16	72.66	76.91
3	.....	73.49	72.16	77.33	77.33	80.24	86.91	80.83	75.41	73.66	72.66	77.24
4	.....	73.41	72.08	77.08	77.33	80.16	86.33	80.83	75.08	73.41	72.66	76.83
5	.....	73.41	72.24	76.91	77.33	80.24	85.58	81.08	75.00	73.41	72.66	76.24
6	.....	73.49	72.33	77.41	77.58	80.83	85.41	81.16	74.83	73.49	72.66	75.83
7	.....	73.24	72.49	77.83	78.08	81.41	85.33	81.00	74.83	73.33	72.66	75.33
8	.....	73.08	72.58	77.83	78.24	81.33	85.00	80.49	74.74	73.24	72.66	76.24
9	.....	73.24	72.83	79.41	78.49	81.08	84.91	80.16	74.66	73.16	72.83	77.83
10	79.91	73.49	73.49	82.00	78.66	80.83	84.41	79.83	74.91	73.16	72.91	78.74
11	79.91	73.49	73.74	82.66	78.66	81.08	84.08	79.91	75.41	73.49	73.16	79.33
12	79.91	74.41	73.66	83.33	78.41	81.41	82.41	79.16	75.08	73.41	73.33	79.08
13	79.91	73.91	73.58	83.49	78.33	81.24	81.08	78.91	74.91	73.66	73.74	78.41
14	77.91	73.66	75.41	82.74	78.24	81.58	80.91	78.66	74.83	73.49	75.16	77.49
15	81.91	72.91	76.16	82.41	78.41	82.08	80.74	78.41	75.00	73.58	78.24	76.33
16	73.16	72.24	75.58	81.24	78.41	81.91	80.58	78.08	75.08	73.41	80.16	75.16
17	73.24	72.00	75.74	80.49	78.41	82.16	80.24	77.83	75.00	73.33	80.33	73.91
18	73.00	72.08	76.41	79.91	78.33	82.74	81.58	78.24	74.66	73.24	80.00	73.00
19	73.33	72.41	76.58	79.41	78.16	83.41	81.49	77.41	74.33	73.24	79.58	71.91
20	73.66	72.58	76.24	79.00	78.16	84.08	81.41	77.33	74.16	73.49	78.91	71.82
21	73.41	73.08	75.58	78.58	78.41	84.33	81.16	77.16	74.00	73.66	77.91	71.49
22	73.24	73.41	75.08	78.33	78.49	83.91	80.91	76.91	73.74	73.74	77.33	71.08
23	73.66	73.08	74.24	78.08	78.24	84.33	81.33	76.58	73.58	73.83	76.83	71.16
24	73.74	73.41	73.91	77.91	78.16	83.58	81.66	76.41	73.58	73.83	76.33	71.49
25	73.91	72.91	73.74	77.74	78.16	83.58	82.08	76.41	73.41	73.58	75.74	71.49
26	73.91	72.74	73.74	77.66	78.16	84.41	82.74	76.33	73.49	73.33	75.41	71.16
27	74.58	72.41	73.83	77.58	78.33	85.08	81.83	76.16	73.49	73.24	74.91	75.33
28	80.91	72.41	73.83	77.66	78.49	86.33	81.24	76.00	73.41	73.08	75.74	75.91
29	75.58		73.74	77.49	78.74	87.24	81.08	75.91	73.33	73.08	75.74	73.83
30	74.58		73.58	77.49	78.91	86.74	80.83	75.74	73.24	73.00	75.33	73.58
31	73.74		73.91	78.74	78.74		80.74	75.66		72.91		75.16

Missouri River.—Hermann, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	75.16	73.08	76.74	78.74	77.33	79.41	81.66	80.66	79.16	76.08	74.24	73.58
2	74.41	73.41	76.91	78.08	77.00	79.41	81.91	80.58	80.33	76.16	74.24	72.33
3	72.58	74.00	77.00	77.58	76.58	79.00	82.49	80.33	81.16	76.24	74.16	71.66
4	73.24	73.91	76.66	77.41	76.33	79.00	82.24	80.24	80.08	76.08	74.08	71.41
5	75.58	73.24	76.24	77.66	76.16	81.74	83.74	80.08	79.83	76.33	74.08	71.41
6	77.83	72.74	75.58	78.49	76.08	79.66	83.58	80.08	80.41	77.08	73.91	71.08
7	78.83	72.91	74.74	79.08	76.08	80.00	83.74	80.16	81.00	76.83	73.91	71.33
8	79.58	72.66	74.49	78.24	76.16	80.08	83.83	80.08	81.41	76.24	73.91	71.49
9	79.83	72.58	74.58	80.58	76.24	81.00	84.00	79.91	81.24	75.66	73.91	75.49
10	79.83	72.41	75.49	82.24	77.41	81.08	84.16	79.83	80.49	75.41	74.00	75.58
11	79.24	72.33	75.74	81.49	78.24	80.66	84.33	79.66	79.66	75.66	74.16	75.49
12	78.41	72.41	75.91	80.58	76.83	80.08	84.41	79.66	78.91	75.49	74.16	75.91
13	77.49	72.66	75.66	79.66	76.33	80.00	84.33	79.58	78.49	75.24	74.33	75.41
14	76.74	73.16	75.33	79.24	76.16	79.74	84.33	79.58	78.16	75.08	74.58	75.49
15	76.16	73.83	75.24	78.83	76.08	79.24	84.49	79.33	77.83	74.91	74.58	73.91
16	75.74	75.24	75.24	78.33	75.91	79.00	84.00	78.91	77.66	74.66	74.58	72.49
17	75.49	75.41	75.24	77.83	75.83	79.00	83.91	78.74	77.41	74.83	74.41	71.58
18	75.00	75.49	75.16	77.74	75.74	79.24	84.00	78.41	77.24	75.24	74.41	72.16
19	74.41	75.41	74.83	78.08	75.58	80.08	83.58	78.24	77.08	75.24	74.58	72.08
20	74.08	75.08	74.24	78.00	76.08	81.41	83.49	77.83	76.74	75.08	74.49	72.08
21	73.91	75.00	74.00	77.74	75.91	81.24	83.41	77.74	76.58	75.24	74.33	72.00
22	73.66	75.00	73.41	77.58	75.66	81.24	83.33	77.58	76.33	75.33	73.58	71.82
23	73.49	75.00	73.24	77.49	75.41	81.16	83.24	77.49	76.24	75.33	72.83	71.74
24	73.41	75.00	73.24	77.33	75.16	81.91	83.33	77.49	76.16	75.33	72.33	71.74
25	73.41	74.83	73.41	77.41	75.08	82.49	83.41	77.41	76.08	75.24	72.08	71.58
26	73.41	76.16	73.49	77.33	75.49	82.33	83.00	77.58	76.00	75.08	72.00	71.58
27	73.41	76.08	73.33	77.49	75.49	82.00	82.33	77.83	76.08	74.91	72.74	71.49
28	73.24	76.16	73.49	78.16	76.24	81.58	81.74	78.49	76.33	74.66	73.49	71.58
29	73.16	76.58	76.00	78.49	76.83	81.33	81.33	79.00	76.24	74.49	73.58	73.08
30	73.00		78.33	77.83	77.74	81.41	81.08	78.74	76.16	74.41	73.66	73.24
31	73.08		79.00		78.83		80.58	78.66		74.33		73.33

Missouri River.—Hermann, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	73.33	73.49	80.41	86.24	89.08	81.91	84.91	79.00	75.24	78.66	77.74	75.58
2	73.33	73.49	80.74	85.16	90.58	82.41	85.41	78.74	75.33	79.33	77.66	75.58
3	73.33	73.49	81.00	85.33	91.33	83.33	85.49	78.66	76.24	80.24	77.58	75.83
4	73.41	73.49	80.74	85.00	91.49	83.91	85.24	78.58	75.41	79.66	77.49	75.83
5	73.24	73.49	80.66	84.41	91.24	84.41	85.08	78.41	75.33	78.91	77.33	75.66
6	73.33	73.49	80.58	84.58	90.49	84.08	84.41	78.33	75.16	79.08	77.33	75.83
7	73.49	74.74	80.41	85.08	88.74	83.41	83.66	78.16	75.16	79.33	77.16	75.83
8	73.66	81.24	79.91	85.24	86.41	83.58	83.00	78.00	75.08	79.24	77.00	75.49
9	73.74	83.41	79.00	85.16	85.24	83.41	82.41	77.91	75.08	79.24	76.91	75.41
10	73.83	83.33	78.83	85.16	84.91	83.08	81.83	77.83	75.08	79.58	76.74	75.24
11	73.74	82.66	79.00	85.41	84.74	83.24	81.49	77.58	75.16	80.24	76.74	75.16
12	73.66	81.91	80.91	85.83	85.00	83.08	81.33	77.41	75.16	80.24	77.41	75.33
13	73.49	81.00	82.91	86.08	84.91	84.58	81.16	77.41	75.24	79.83	78.66	75.74
14	73.41	80.24	83.33	86.33	84.49	84.00	81.66	77.16	75.24	79.08	80.74	75.91
15	73.41	79.49	83.41	86.41	84.08	83.58	82.16	77.08	75.24	78.24	81.41	75.91
16	73.33	78.66	83.66	86.41	83.74	83.49	82.33	77.00	75.24	78.00	81.33	76.58
17	73.33	78.41	84.83	85.66	83.66	83.66	82.08	76.91	76.08	78.83	81.24	76.49
18	73.33	77.00	85.33	84.74	83.58	84.58	82.08	76.58	76.08	80.16	83.74	76.33
19	73.24	76.91	85.08	84.33	83.41	85.33	81.91	76.58	75.66	80.91	85.00	76.08
20	73.24	76.91	84.58	84.33	83.24	85.58	81.66	76.58	75.58	82.00	84.00	75.83
21	73.33	76.58	83.91	84.58	83.00	84.91	81.08	76.49	75.58	82.00	83.08	76.08
22	73.41	76.24	83.33	85.41	82.66	84.49	80.74	76.49	75.49	81.83	82.41	77.08
23	73.24	77.24	83.16	86.00	83.24	84.08	80.49	76.33	75.66	82.24	81.58	77.91
24	73.33	77.24	83.49	86.58	84.00	83.91	80.41	76.16	75.49	82.24	81.49	78.66
25	73.33	76.83	83.83	86.91	84.08	83.91	80.33	76.08	75.49	82.24	79.16	78.74
26	73.33	77.16	83.49	87.16	83.91	83.74	80.16	75.91	75.33	81.83	78.00	78.58
27	73.16	78.74	83.24	87.33	83.49	83.83	79.91	75.74	75.00	80.91	77.16	78.24
28	73.08	80.00	83.08	87.49	82.91	83.91	79.49	75.49	74.91	79.66	76.58	77.74
29	73.41		83.16	87.83	82.41	83.49	79.33	75.41	74.58	78.83	76.00	77.24
30	73.41		83.91	88.41	82.08	83.66	79.24	75.33	75.41	78.41	75.49	75.91
31	73.49		86.08		82.00		79.16	75.24		78.00		76.41

Missouri River.—Hermann, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	76.24	73.83	81.58	76.91	81.16	85.74	88.16	79.83	75.66	73.41	75.33	73.00
2	75.74	73.41	80.00	76.74	80.49	85.08	89.58	80.24	75.74	73.33	75.16	72.74
3	75.41	73.08	79.08	76.49	79.58	84.74	90.00	81.00	75.58	73.41	74.91	72.66
4	75.33	73.00	79.08	76.08	79.08	83.83	89.58	81.49	75.49	73.41	74.41	72.24
5	74.83	72.91	79.24	75.83	79.41	83.33	89.08	81.58	75.41	73.24	74.00	72.24
6	74.74	73.00	79.00	75.66	79.49	83.24	88.74	81.08	75.24	73.24	73.74	72.16
7	74.66	73.16	78.66	75.83	79.16	83.08	88.16	80.41	75.14	74.00	73.66	72.33
8	74.08	73.33	78.33	76.00	79.00	82.49	87.49	79.91	75.00	73.91	73.66	72.08
9	73.74	73.66	78.91	77.66	80.33	81.74	86.49	79.49	75.00	74.08	73.74	72.00
10	73.66	73.66	80.91	78.33	80.49	81.00	85.49	79.16	74.83	74.08	73.74	71.16
11	73.58	73.91	80.66	79.00	79.91	80.16	84.74	79.00	74.74	74.24	73.74	70.91
12	73.66	74.66	80.33	80.08	79.74	79.74	84.41	78.83	74.66	74.33	74.91	70.58
13	73.83	74.41	79.91	81.16	79.74	79.83	83.91	78.66	74.58	74.41	75.08	70.24
14	75.49	74.49	79.41	82.58	79.66	80.08	83.16	78.41	74.49	74.41	75.16	69.74
15	75.33	74.24	78.91	83.41	79.58	79.91	83.49	78.24	74.33	74.24	75.66	69.58
16	75.49	74.24	78.66	83.33	79.16	81.24	83.74	78.14	74.24	73.91	75.41	68.74
17	75.33	74.58	78.91	82.41	79.00	83.41	83.66	77.83	74.16	73.91	75.33	68.41
18	75.24	75.41	78.74	81.58	79.58	83.08	84.00	77.33	74.08	74.16	74.91	69.41
19	75.24	75.16	78.41	81.08	79.41	82.74	84.41	77.16	73.91	74.41	75.24	69.58
20	74.66	87.16	78.41	80.66	80.41	82.58	84.24	77.00	74.08	74.41	74.74	69.16
21	74.00	88.16	78.16	80.08	79.91	84.58	83.74	76.74	74.24	73.91	74.24	70.58
22	73.58	86.83	78.33	80.24	79.49	85.16	83.08	77.16	74.33	73.74	73.91	71.08
23	73.41	85.91	78.41	82.66	79.16	85.66	82.41	76.49	74.08	73.74	73.83	73.16
24	73.08	85.24	78.41	82.33	80.00	85.58	81.83	76.33	73.74	73.74	73.58	72.41
25	73.08	84.33	78.24	82.00	81.83	85.33	81.33	76.08	73.66	73.66	73.49	73.24
26	73.24	83.49	77.66	81.83	82.00	85.41	80.91	76.33	73.49	73.66	73.16	72.58
27	73.91	82.41	77.16	81.74	83.41	86.08	80.66	76.16	73.41	73.58	73.16	72.24
28	74.24	81.91	76.91	81.66	85.24	86.58	80.33	75.91	73.33	73.49	73.16	71.00
29	74.33		76.83	81.66	85.41	87.00	80.41	75.74	73.41	73.66	73.33	71.91
30	74.33		76.83	81.58	85.66	87.24	80.58	75.66	73.41	75.41	73.16	71.91
31	73.83		76.91		85.74		80.58	75.49		75.58		71.74

Missouri River.—Hermann, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	73.08	76.49	76.33	83.41	83.16	80.33	83.24	81.74	78.66	84.41	77.08	75.91
2	72.41	77.16	76.08	83.08	84.00	81.08	82.49	81.58	79.24	82.58	76.66	75.41
3	71.74	77.41	75.91	82.74	84.49	81.49	82.33	81.58	79.33	81.24	76.41	74.91
4	71.58	78.41	75.49	83.33	85.16	81.66	82.24	81.41	79.24	81.08	76.91	74.49
5	73.00	81.16	75.33	83.58	85.58	81.08	82.24	80.83	78.33	79.08	76.91	74.33
6		80.74	74.91	83.74	85.91	81.16	83.16	80.33	77.91	78.91	76.24	74.08
7		79.91	74.91	83.91	85.66	81.33	83.41	79.91	77.74	80.33	76.08	74.91
8		79.00	74.74	85.00	85.16	81.41	83.58	79.41	77.41	79.33	76.08	75.33
9		78.16	74.91	85.24	85.58	82.33	83.33	78.91	77.41	79.24	75.91	75.91
10		77.16	75.08	85.24	84.24	83.08	82.91	78.66	77.16	79.74	75.66	76.83
11		76.66	75.24	84.91	84.24	84.33	82.49	78.49	76.91	79.83	75.58	77.66
12		77.24	75.91	84.74	84.16	84.16	82.24	78.16	76.91	79.74	75.41	78.41
13		79.83	76.08	83.33	83.41	84.00	82.08	77.91	77.41	79.66	75.08	78.41
14		79.16	75.74	.....	82.58	83.66	82.41	77.74	77.16	79.49	75.08	78.33
15		79.41	75.16	.....	81.83	81.91	83.41	77.66	76.41	78.58	75.00	78.16
16		80.33	75.66	.....	81.41	81.91	85.43	77.41	76.33	78.24	74.83	77.91
17		80.41	76.91	.....	81.41	81.83	85.16	77.41	76.33	78.16	74.83	76.91
18		81.08	78.49	.....	81.33	82.08	84.08	77.66	76.24	77.91	74.91	76.41
19		79.41	79.91	81.91	81.49	82.74	83.74	77.66	76.41	77.66	74.91	74.91
20		79.16	80.24	81.83	81.66	83.58	82.24	78.41	76.08	77.24	74.91	73.91
21		79.16	80.41	81.83	81.16	84.08	81.41	78.49	76.24	76.91	74.74	73.49
22		79.08	80.66	82.91	80.58	83.91	81.00	77.83	76.16	76.83	75.00	73.24
23		79.08	80.83	83.16	80.24	83.91	80.91	77.41	76.24	78.24	78.91	73.33
24		78.91	81.24	83.91	80.16	84.33	80.91	77.33	76.58	78.58	77.41	73.58
25		78.16	81.66	84.33	80.91	84.91	80.74	77.49	78.66	78.66	77.16	.....
26		77.58	83.66	83.91	79.83	84.00	80.66	77.91	79.16	78.83	77.41	.....
27		77.33	84.83	83.00	80.08	84.00	81.58	78.66	80.33	77.91	77.66	.....
28		76.74	85.24	83.41	80.41	84.58	81.91	79.16	81.74	77.58	77.49	.....
29		76.49	83.41	82.74	80.58	84.08	81.74	79.00	82.74	77.58	76.91	79.58
30			83.33	82.16	80.58	83.74	81.74	78.58	82.58	77.41	76.49	79.91
31	76.41	.....	82.91	.....	80.41	.....	82.24	78.41	.....	77.24	.....	80.91

Missouri River.—Hermann, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	*82.2	79.3	77.6	81.8	86.9	84.4	87.0	84.9	81.0	79.0	78.7	76.8
2	81.9	78.9	78.1	81.8	87.4	84.2	86.8	84.6	81.3	78.8	78.4	76.8
3	80.9	78.4	78.7	83.6	86.9	84.1	86.0	84.5	81.4	78.7	78.1	76.6
4	80.9	79.4	79.7	85.3	86.9	84.1	85.9	84.3	82.3	78.5	78.0	76.6
5	79.9	80.3	81.5	85.5	86.3	84.3	85.6	84.0	83.6	78.2	77.9	76.5
6	79.2	80.6	82.6	84.0	85.7	84.3	85.3	83.9	83.3	78.1	78.4	76.4
7	79.4	81.2	84.3	83.8	85.5	84.4	86.9	83.8	83.5	78.0	78.8	76.3
8	79.1	81.9	84.0	83.8	84.6	84.9	87.1	83.4	86.3	77.8	80.1	76.1
9	79.2	81.9	82.9	83.6	84.4	84.5	87.3	83.3	86.0	77.6	80.0	76.0
10	79.2	81.4	83.8	83.6	84.1	84.9	87.2	83.1	86.4	77.3	79.5	75.9
11	79.0	80.9	84.8	83.5	83.7	84.7	86.9	82.8	86.3	77.3	79.3	75.7
12	78.9	80.3	85.3	83.2	83.0	84.6	86.8	82.8	86.0	77.2	77.9	75.5
13	78.4	80.1	85.1	82.7	82.4	86.4	86.5	84.3	87.1	77.1	77.9	75.1
14	78.3	79.7	85.4	82.2	81.9	88.0	86.5	85.6	87.3	77.0	77.8	75.0
15	78.4	78.9	87.6	82.0	81.6	89.4	87.0	84.6	86.8	77.0	77.8	....
16	77.9	78.3	85.8	82.3	81.4	90.0	87.3	83.8	86.4	77.0	77.8	....
17	76.9	78.1	85.3	82.5	81.4	89.1	87.3	83.3	86.1	77.1	77.8	....
18	76.3	77.9	85.0	83.3	81.7	88.8	86.8	83.0	85.8	77.1	77.7	....
19	75.9	77.9	84.8	83.1	81.9	88.7	86.1	82.4	85.8	77.2	77.6	....
20	74.9	77.3	84.7	82.8	82.1	89.1	85.8	82.1	84.3	77.3	77.3	....
21	74.9	77.1	84.6	82.3	82.9	89.6	85.6	81.8	84.3	77.6	77.3	....
22	74.6	76.9	84.4	82.1	83.1	89.4	85.3	81.7	83.8	77.9	77.2	....
23	74.3	76.9	83.0	84.3	83.2	89.3	84.8	81.4	82.8	78.1	77.0	74.8
24	74.3	76.9	82.8	86.3	83.3	89.0	84.6	81.0	81.7	78.0	77.0	75.4
25	74.1	76.7	82.4	86.4	83.1	88.7	84.6	80.8	80.7	77.8	77.1	75.1
26	74.0	+76.5	81.9	87.8	82.8	88.3	85.4	80.8	80.1	77.6	77.1	74.9
27	73.9	76.8	81.6	87.4	83.3	88.7	85.1	80.7	79.8	77.6	77.0	75.5
28	73.7	77.2	81.6	87.2	84.1	88.3	85.0	80.5	79.8	77.5	76.9	75.0
29	74.9		81.8	87.1	85.5	88.0	84.8	80.5	79.6	77.7	76.9	74.8
30	79.7		82.1	86.7	85.4	87.6	84.8	80.4	79.1	78.1	76.8	74.6
31	79.7		81.9		85.1		84.8	80.9		78.2		75.8

* Zero checked, found 1'.0 too high; elevations corrected.

(20)

† New gauge put in.

Missouri River.—Jefferson City, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									113.84	111.89	110.84	111.01
2									113.76	111.72	110.84	111.01
3									113.64	111.68	110.84	111.01
4									113.43	111.68	110.84	110.97
5									113.22	111.64	110.84	110.93
6									113.05	111.60	110.84	110.93
7									112.89	111.52	111.01	110.93
8									112.76	111.44	110.97	110.93
9									112.64	111.35	110.93	110.93
10									112.40	111.35	110.93	110.84
11									112.27	111.27	110.93	110.84
12									112.27	111.18	110.84	110.72
13									112.18	111.10	110.84	110.68
14									112.60	111.01	110.84	110.52
15									112.72	111.01	110.84	110.52
16									112.76	111.01	110.76	110.35
17									112.47	110.93	110.76	110.35
18								116.31	112.35	110.93	110.76	110.22
19								116.14	112.27	110.93	110.76	110.18
20								115.84	112.09	110.93	110.76	110.18
21								115.64	111.97	110.93	110.76	110.18
22								115.76	111.84	110.93	110.76	110.26
23								115.47	111.80	110.84	110.76	110.26
24								114.92	111.76	110.84	110.89	110.26
25								114.76	111.76	110.84	110.97	110.26
26								114.64	111.76	110.84	111.18	110.26
27								114.48	111.76	110.84	111.27	110.35
28								114.35	111.84	110.84	111.22	111.27
29								114.14	111.89	110.84	111.10	111.56
30								114.01	111.97	110.84	111.01	111.60
31								113.89	.....	110.84	.....	111.60

Missouri River.—Jefferson City, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	111.52	111.35	111.35	116.76	116.18	117.84	124.68	118.60	.....	.....	.....	.....
2	111.44	111.35	111.35	116.89	116.18	117.84	124.44	118.52	.....	.....	.....	.....
3	111.44	111.40	111.27	116.76	116.18	119.35	123.35	118.89	.....	.....	.....	.....
4	111.44	111.44	111.27	116.60	116.18	119.60	123.72	119.04	.....	.....	.....	.....
5	111.44	111.52	111.60	116.52	116.18	119.84	123.52	119.10	.....	.....	.....	.....
6	111.44	111.52	112.09	116.80	116.27	120.26	123.26	119.01	.....	.....	.....	.....
7	111.35	111.60	112.27	116.93	116.52	120.48	122.93	118.76	.....	.....	.....	.....
8	111.35	111.60	112.60	117.14	116.76	120.52	122.60	118.52	.....	.....	.....	.....
9	111.35	111.68	112.89	117.35	117.10	119.84	122.35	118.10	.....	.....	.....	.....
10	111.27	111.68	113.01	117.84	117.44	119.76	122.35	117.64	.....	.....	.....	.....
11	111.27	111.60	112.93	118.68	117.35	120.06	122.35	117.35	.....	.....	.....	.....
12	111.35	111.60	114.35	119.35	117.10	120.18	122.14	116.97	.....	.....	.....	.....
13	111.44	111.60	114.84	119.35	117.47	120.18	121.68	116.68	.....	.....	.....	.....
14	111.68	111.68	115.27	119.35	117.68	120.40	121.23	116.52	.....	.....	.....	.....
15	111.68	111.68	115.18	118.84	117.76	120.68	120.72	116.44	.....	.....	.....	.....
16	111.64	111.60	115.47	118.60	117.52	120.80	120.48	116.18	.....	.....	.....	.....
17	111.60	111.52	115.35	117.84	117.52	121.05	120.01	115.80	.....	.....	.....	.....
18	111.60	111.44	115.35	117.44	117.44	121.81	119.76	115.35	.....	.....	.....	.....
19	111.60	111.60	115.35	116.84	117.44	122.52	119.48	115.09	.....	.....	.....	.....
20	111.60	111.60	115.10	116.84	117.60	122.72	119.22	115.01	.....	.....	.....	.....
21	111.60	111.76	114.84	116.76	117.68	122.92	119.04	114.80	.....	.....	.....	.....
22	111.60	111.93	114.35	116.68	117.76	123.01	118.93	114.76	.....	.....	.....	.....
23	111.60	112.35	114.35	116.60	117.60	121.97	119.05	114.76	.....	.....	.....	.....
24	111.68	112.01	114.18	116.52	117.52	122.64	119.31	114.68	.....	.....	.....	.....
25	111.68	111.84	114.27	116.44	117.35	123.60	119.48	114.56	.....	.....	.....	.....
26	111.76	112.01	114.22	116.35	117.35	124.77	119.60	114.52	.....	.....	.....	.....
27	112.76	112.35	114.06	116.31	117.60	125.01	119.56	114.35	.....	.....	.....	.....
28	112.35	112.52	113.97	116.27	117.60	125.26	119.35	114.35	.....	.....	.....	.....
29	111.84		113.93	116.27	117.60	125.01	119.22	114.27	.....	.....	.....	.....
30	111.35		113.97	116.27	117.60	124.76	118.97	114.10	.....	.....	.....	.....
31	111.35		114.19	116.27	117.68		118.68		.....	.....	.....	.....

Missouri River.—Cedar City, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									120.11	116.69	114.81	112.04
2									121.01	116.69	114.74	111.97
3									120.81	116.74	114.67	111.89
4									119.46	117.09	114.61	112.07
5									118.91	117.49	114.57	112.21
6									119.21	117.69	114.49	112.14
7									120.16	117.07	114.49	112.21
8									120.91	116.47	114.49	112.11
9									121.21	115.67	114.54	112.01
10									120.31	115.49	114.67	111.91
11									119.16	115.31	114.71	111.84
12								120.31	119.21	115.17	114.89	111.54
13								120.31	118.81	115.14	115.19	111.59
14								120.01	118.46	115.09	115.24	112.04
15								119.66	118.26	115.04	115.14	112.54
16								119.56	118.16	115.04	115.01	112.91
17								119.01	118.01	115.17	114.91	113.24
18								118.66	117.81	115.49	114.81	113.24
19								118.26	117.56	115.34	114.71	113.24
20								118.06	117.27	115.47	114.61	113.09
21								117.86	116.99	115.55	113.99	112.84
22								117.81	116.91	115.59	113.34	112.51
23								117.81	116.87	115.62	112.69	112.44
24								117.81	116.81	115.61	112.54	112.44
25								117.91	116.71	115.51	112.39	112.44
26								118.16	116.64	115.39	112.12	112.44
27								118.86	116.87	115.19	112.01	112.44
28								119.71	116.94	115.01	111.94	112.74
29								119.61	116.74	114.91	111.87	111.84
30								119.61	116.69	114.89	111.91	111.39
31								119.66	.....	114.84	.....	111.17

Missouri River.—Cedar City, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	111.67	114.44	119.47	127.11	131.17	122.54	126.14	119.89	116.07	117.18	119.71	115.69
2	111.84	114.44	119.99	126.81	132.07	123.44	126.09	119.89	116.09	119.02	120.44	116.07
3	111.84	114.49	119.97	126.97	132.77	124.69	126.19	119.57	116.17	117.67	121.39	116.47
4	112.04	114.57	119.71	125.84	132.84	125.14	126.34	119.29	116.17	116.72	122.31	116.47
5	112.54	114.67	119.64	125.11	132.27	125.09	126.19	119.29	116.09	116.82	122.69	116.44
6	113.11	114.84	119.87	125.61	130.99	124.79	125.31	119.14	116.09	117.22	122.69	116.44
7	114.91	117.57	119.54	126.11	128.41	124.54	124.67	118.94	115.99	117.67	122.34	116.24
8	114.34	121.54	119.19	126.24	126.29	124.24	124.09	118.71	115.94	118.52	121.89	115.97
9	114.39	124.59	118.77	126.39	125.31	123.89	123.39	118.64	115.89	118.92	121.41	115.84
10	114.54	123.19	119.29	126.69	124.74	123.84	122.99	118.59	115.94	118.57	121.24	115.87
11	114.64	121.93	121.94	127.34	124.89	124.19	122.24	118.39	116.01	118.09	120.94	115.84
12	114.69	120.73	.....	127.74	125.34	125.04	121.57	118.14	116.09	117.79	120.67	115.97
13	114.54	118.94	123.64	127.99	125.09	125.19	121.74	117.94	116.17	117.65	120.57	116.61
14	115.34	117.24	123.84	128.34	124.69	124.54	122.07	117.84	116.44	117.80	120.39	117.09
15	115.39	115.59	123.84	128.64	124.29	124.34	123.64	117.77	117.31	117.98	119.24	116.91
16	115.34	115.34	124.47	128.59	124.14	124.39	123.57	117.67	117.31	118.87	119.31	116.74
17	115.34	114.49	126.19	127.54	124.14	124.84	123.29	117.57	117.11	119.92	119.54	116.37
18	115.07	114.19	125.79	126.39	124.04	125.89	122.94	117.49	116.99	121.37	119.89	116.14
19	114.91	114.29	125.54	125.87	123.89	126.44	122.54	117.44	116.99	121.97	120.04	116.04
20	114.81	113.97	124.94	125.79	123.69	126.14	122.19	117.39	116.99	122.33	118.34	116.19
21	114.77	114.07	123.94	126.44	123.34	125.77	121.99	117.34	117.04	121.79	117.27	117.14
22	114.74	114.37	123.49	127.39	123.44	125.49	121.69	117.27	116.80	121.64	116.64	117.74
23	114.74	115.77	123.24	128.14	124.19	125.47	121.49	117.21	116.70	122.52	116.39	118.17
24	114.79	114.54	123.49	128.69	124.79	125.51	121.37	117.09	116.60	122.87	116.29	118.09
25	114.74	114.69	123.49	128.99	124.54	124.99	121.21	116.77	116.55	123.07	116.24	118.04
26	114.74	114.99	123.19	129.19	124.04	124.84	120.94	116.54	116.35	122.42	116.21	117.79
27	114.74	117.24	123.14	129.34	123.49	125.04	120.61	116.29	116.18	121.30	116.04	117.49
28	114.74	118.84	123.29	129.54	122.97	124.69	120.37	116.12	116.14	120.17	115.84	117.19
29	114.74		123.69	129.87	122.69	124.51	120.17	116.08	116.14	119.52	115.54	116.89
30	114.69		125.74	130.44	122.49	125.14	120.09	116.04	117.65	119.24	115.54	116.69
31	114.51		127.24		122.34		120.01	116.01		119.17		116.57

Missouri River.—Cedar City, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	116.31	113.94	115.54	117.29	122.04	124.64	129.07	120.07	114.64	112.24	115.29	113.94
2	115.97	113.91	115.84	117.09	120.99	124.34	130.69	120.69	114.61	112.24	115.04	113.79
3	115.69	113.89	116.44	116.64	120.34	123.99	130.29	121.29	114.51	112.24	114.84	113.67
4	115.34	113.67	116.71	116.29	120.39	122.74	129.74	121.69	114.47	112.21	114.64	113.64
5	114.84	113.64	117.04	116.21	120.77	122.84	129.07	121.24	114.37	112.11	114.64	113.59
6	114.19	113.89	117.44	116.34	120.84	122.84	128.69	120.59	114.24	112.14	114.59	113.59
7	114.01	113.94	117.74	116.59	120.54	122.64	128.29	120.04	114.21	112.14	114.59	113.71
8	113.94	114.04	117.84	117.11	120.64	122.09	127.44	119.59	114.11	112.44	114.59	113.59
9	113.87	114.09	118.69	118.59	121.09	121.39	126.47	119.37	114.01	112.39	114.51	113.24
10	113.74	114.34	119.89	119.54	121.07	120.84	125.57	119.11	113.91	112.39	114.44	112.99
11	113.69	114.69	119.84	120.64	120.94	120.51	124.94	118.99	113.79	112.44	115.14	112.71
12	113.71	114.74	119.14	121.54	120.94	120.44	124.59	118.81	113.59	112.39	115.14	112.51
13	114.24	114.54	118.24	122.79	120.89	120.84	124.11	118.61	113.39	112.51	114.81	112.29
14	114.64	114.29	117.54	124.44	120.79	120.94	123.69	118.21	113.17	112.57	114.61	112.24
15	114.79	114.39	117.49	125.04	120.54	121.17	123.57	117.77	113.07	114.51*	114.51	112.21
16	114.74	114.64	117.54	124.24	120.29	121.77	123.99	117.31	112.97	114.69	114.51	112.21
17	114.49	115.49	118.09	123.24	120.49	123.44	123.97	116.84	112.87	115.04	114.54	112.14
18	114.29	115.94	118.24	122.51	121.34	123.44	124.01	116.49	112.77	115.41	114.67	111.87
19	114.04	118.59	117.91	121.99	121.69	123.29	124.34	116.27	112.74	115.47	114.74	111.71
20	113.74	122.14	117.51	121.44	121.37	124.54	124.59	115.94	112.99	115.27	114.74	111.94
21	113.44	122.39	117.67	121.34	121.04	125.44	124.01	115.71	113.11	115.14	114.64	112.71
22	113.29	121.49	117.99	122.24	120.67	126.09	123.39	115.64	112.99	115.11	114.57	112.94
23	113.29	120.14	118.17	122.99	120.94	126.44	122.77	115.57	112.64	115.04	114.47	113.24
24	113.49	117.49	117.99	122.84	122.24	126.14	122.29	115.54	112.49	114.91	114.34	113.17
25	113.59	116.24	117.49	122.84	122.44	125.99	121.54	115.47	112.39	114.81	114.27	112.91
26	113.71	115.69	116.99	122.74	121.94	126.29	121.07	115.37	112.34	114.74	114.29	112.81
27	114.34	115.49	116.59	122.57	123.04	126.84	120.69	115.14	112.34	114.74	114.39	112.74
28	114.41	115.47	116.57	122.54	123.74	127.34	120.47	114.91	112.24	114.81	114.29	112.69
29	114.54		116.84	122.54	124.14	127.84	120.37	114.69	112.24	115.59	114.19	112.64
30	114.09		116.99	122.49	124.29	128.14	120.34	114.64	112.24	115.54	114.07	112.59
31	114.04		117.09		124.39		119.99	114.64		115.44		112.34

*Zero corrected. Correct gauge reads 1' 93 higher.

(24)

Missouri River.—Jefferson City, Mo., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	112.39	112.92	120.67	119.15	118.55	123.12	129.75	122.00	117.30	115.05	116.70	114.42
2	112.37	113.35	120.27	118.75	118.20	122.92	129.15	121.40	117.15	115.07	116.52	114.25
3	112.31	113.82	119.32	118.45	118.00	122.55	128.17	120.47	117.00	115.00	116.32	114.07
4	112.09	114.55	118.67	118.30	117.92	122.30	127.17	119.80	116.85	115.22	116.02	113.95
5	111.51	114.75	118.47	118.35	117.85	122.90	126.07	119.47	116.70	115.55	115.82	113.80
6	111.27	114.77	119.02	118.67	117.75	124.00	125.30	119.45	116.57	115.32	115.80	113.65
7	111.14	114.77	119.57	118.75	117.75	124.80	124.77	119.45	116.47	115.42	116.20	113.60
8	111.09	114.60	120.05	118.77	117.60	124.75	124.47	119.30	116.30	115.60	117.57	113.47
9	110.94	114.35	119.67	118.95	117.45	124.67	124.52	118.92	116.12	115.67	118.40	113.40
10	111.11	114.35	118.82	119.20	117.40	125.05	124.55	118.60	116.02	115.80	118.70	113.35
11	110.79	114.22	118.17	119.15	117.32	125.17	124.55	118.45	115.92	115.92	118.32	113.32
12	111.11	114.10	117.90	118.87	117.32	125.42	124.57	118.40	115.82	115.67	117.80	113.32
13	111.37	113.95	118.10	118.57	117.87	125.92	124.87	118.47	115.72	115.45	116.95	113.40
14	111.50	114.95	118.97	118.45	118.62	127.15	125.67	118.40	115.62	115.30	116.40	113.55
15	111.45	117.52	118.85	118.27	120.15	127.15	125.92	118.45	115.52	115.12	116.15	113.55
16	111.62	121.87	118.20	118.05	121.00	127.27	126.02	118.82	115.42	115.22	115.92	113.70
17	111.82	124.62	118.10	118.32	121.55	128.75	125.75	119.62	115.35	115.47	115.70	113.70
18	112.42	122.95	118.45	118.95	123.02	129.70	125.25	119.10	115.27	116.10	115.50	113.77
19	112.65	121.47	118.75	119.80	123.87	130.37	124.57	118.72	115.22	116.32	115.22	113.70
20	112.60	121.42	118.65	121.07	123.67	131.05	124.37	118.65	115.20	116.17	114.95	113.52
21	112.70	121.50	118.70	121.85	123.85	131.65	123.85	118.77	115.15	115.92	114.90	113.35
22	112.75	121.10	118.90	122.45	123.42	132.20	122.95	119.77	115.12	116.00	114.80	112.90
23	112.75	120.42	119.00	121.65	122.65	132.72	122.27	119.82	115.10	116.27	114.72	112.32
24	112.82	120.47	118.47	120.67	122.15	132.37	121.90	119.47	115.02	116.27	114.70	112.05
25	112.85	120.77	118.02	119.97	121.90	132.35	122.50	119.30	115.00	115.97	114.52	112.00
26	112.87	121.05	117.77	119.45	122.12	131.50	121.92	119.00	114.97	115.75	114.57	112.00
27	112.67	120.97	117.50	119.02	123.57	131.10	121.07	118.55	114.95	116.02	114.67	111.87
28	112.60	120.90	117.82	118.80	124.70	130.87	120.75	118.15	114.95	116.97	114.75	111.82
29	112.65		119.85	118.67	124.65	130.62	120.32	117.85	114.95	117.35	114.67	111.60
30	112.77		119.92	118.65	124.02	130.22	120.35	117.65	115.05	117.45	114.52	111.42
31	112.87		119.52		123.42		120.95	117.50		117.05		111.50

Missouri River.—Jefferson City, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	111.30	116.15	114.60	122.70	120.72	120.65	123.87	122.05	119.30	122.42	116.20	114.65
2	110.32	115.90	114.65	122.52	121.47	121.45	123.37	121.95	119.70	120.80	116.10	114.42
3	110.27	117.25	114.45	122.52	122.35	121.75	123.17	122.07	119.30	119.65	116.10	114.32
4	111.02	116.77	114.27	123.05	123.20	121.85	123.15	121.65	118.80	118.72	116.72	114.25
5	111.32	117.50	114.15	123.30	123.60	122.17	123.52	121.00	118.32	118.20	116.30	114.32
6	111.42	117.15	114.02	123.55	123.67	122.60	123.97	120.52	117.95	118.10	116.07	114.47
7	111.45	116.42	114.07	124.70	123.70	122.70	124.30	120.05	117.75	117.82	115.90	115.42
8	111.60	114.97	114.02	125.25	123.35	122.65	124.20	119.55	117.77	117.70	115.75	115.87
9	111.90	114.27	114.07	125.35	122.95	123.50	123.97	119.12	117.60	118.25	115.62	115.92
10	112.05	113.72	114.05	125.45	122.77	124.50	123.50	118.85	117.37	118.57	115.52	116.02
11	112.20	113.42	114.25	125.40	123.05	124.62	123.20	118.60	117.17	118.55	115.45	116.47
12	112.40	114.00	114.42	124.85	122.60	124.62	123.00	118.40	117.67	118.82	115.37	116.62
13	112.62	114.97	114.55	123.90	121.90	124.30	123.02	118.20	117.60	118.80	115.27	116.40
14	112.85	114.20	114.95	123.22	121.22	123.87	123.40	118.02	116.97	118.52	115.25	115.90
15	113.05	113.72	115.50	122.75	120.87	123.70	124.72	117.85	116.65	118.30	115.20	115.55
16	113.20	113.52	115.70	122.27	120.60	123.50	125.90	117.75	116.65	118.20	115.15	115.22
17	113.27	113.80	115.90	121.85	120.45	123.47	125.05	117.85	116.60	118.12	115.15	114.97
18	113.37	114.70	117.17	121.57	120.35	123.77	124.12	118.00	116.45	117.90	115.12	114.10
19	113.42	115.10	117.85	121.27	120.82	124.40	123.22	118.67	116.40	117.60	115.07	112.97
20	113.52	115.00	119.42	121.27	120.57	124.95	122.30	118.42	116.52	117.15	115.05	112.27
21	113.70	115.22	119.70	121.70	119.97	125.05	121.67	118.02	116.55	116.85	115.05	112.15
22	113.82	115.45	119.65	122.70	119.75	124.92	121.40	117.77	116.55	118.02	115.17	111.95
23	113.87	115.37	120.30	123.15	119.72	124.90	121.27	117.75	116.55	118.87	116.20	112.00
24	113.92	115.20	120.62	123.50	119.50	125.20	121.10	117.67	118.70	118.60	116.45	112.05
25	114.00	114.97	121.42	123.22	119.37	125.42	121.17	117.87	118.95	117.87	116.55	111.87
26	114.00	114.67	123.60	122.37	119.65	125.52	122.02	118.40	119.87	117.40	116.30	111.80
27	114.00	114.92	125.52	121.52	120.05	125.42	122.02	119.35	120.70	116.82	116.10	112.02
28	113.97	115.05	124.52	120.90	120.45	125.12	122.15	119.20	122.45	116.97	115.67	112.35
29	113.87	114.75	123.57	120.40	120.47	124.77	122.15	118.82	122.42	116.97	115.20	114.20
30	113.95		123.00	120.07	120.30	124.35	122.30	118.67	122.25	116.67	114.90	115.30
31	115.47		122.60		120.12		122.27	118.70		116.40		118.37

Missouri River.—Jefferson City, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	117.00	113.15	114.57	119.08	123.35	120.92	124.30	121.90	118.27	116.13	116.20	115.25
2	116.52	113.07	115.17	119.15	123.57	121.10	123.80	121.78	118.57	116.02	116.00	115.18
3	115.77	113.30	115.77	120.05	123.10	121.40	123.55	121.70	118.90	115.90	116.05	115.15
4	115.42	114.65	116.82	121.25	122.90	121.62	123.45	120.40	119.57	115.73	116.10	115.07
5	114.92	115.35	118.20	120.55	122.20	121.95	123.53	120.95	119.45	115.65	116.10	114.92
6	115.42	115.60	120.12	119.95	121.50	121.82	123.50	120.90	119.65	115.58	116.47	114.83
7	115.35	116.20	121.17	119.57	120.90	122.35	123.60	120.83	119.95	115.43	117.28	115.00
8	115.40	117.33	120.65	119.15	120.70	123.25	123.72	120.70	120.67	115.33	117.60	115.12
9	115.80	117.97	120.50	119.20	120.60	123.18	123.80	120.60	120.60	115.23	117.23	114.87
10	115.77	118.15	121.15	119.35	120.23	122.70	123.70	120.60	120.35	115.15	116.62	114.75
11	115.80	117.67	122.40	119.35	119.77	122.72	123.63	120.85	120.40	115.05	116.17	114.30
12	115.87	116.87	122.65	119.20	119.35	123.13	123.50	121.02	119.82	115.05	115.90	113.42
13	115.75	116.03	122.33	118.92	119.00	124.70	123.30	122.98	121.05	115.00	115.75	112.87
14	115.82	115.47	122.97	118.80	118.70	125.77	123.10	122.67	120.35	115.00	115.75	112.23
15	116.05	115.35	123.72	119.10	118.53	126.28	123.05	121.47	120.07	115.05	115.85	111.35
16	116.95	115.30	122.30	119.33	118.40	126.23	123.03	120.75	119.40	115.10	115.90	111.28
17	115.55	115.30	122.00	120.05	118.45	125.80	123.00	120.17	119.13	115.13	115.90	111.35
18	115.12	115.00	122.13	120.33	118.53	125.85	122.95	119.72	119.05	115.15	115.82	111.50
19	114.90	115.77	121.87	120.00	118.75	125.85	122.85	119.28	118.70	115.23	115.70	111.70
20	114.65	114.57	121.45	119.57	119.05	126.90	122.32	118.90	118.27	115.38	115.53	111.85
21	114.55	114.55	121.35	119.08	119.55	127.45	121.95	118.70	118.07	116.05	115.50	112.00
22	114.30	114.55	120.92	118.75	120.10	127.38	121.62	118.55	117.90	116.47	115.55	112.35
23	114.25	114.60	120.40	120.25	120.10	127.13	121.35	118.33	117.48	116.15	115.55	114.15
24	114.10	114.60	119.83	121.45	119.90	126.78	121.20	118.08	117.17	115.75	115.60	113.40
25	113.77	114.37	119.32	121.17	119.60	126.55	121.47	117.90	116.90	115.50	115.60	113.72
26	113.67	114.17	119.00	121.62	119.82	126.25	122.00	117.70	116.73	115.37	115.50	114.45
27	113.65	113.90	119.03	122.47	120.57	126.18	122.08	117.60	116.60	115.35	115.40	114.27
28	113.63	114.17	119.77	122.60	120.85	125.00	122.30	117.65	116.53	115.47	115.35	114.10
29	113.58		119.67	122.35	121.60	125.57	122.17	117.67	116.55	115.80	115.32	114.03
30	113.42		119.35	122.43	121.65	124.90	122.05	117.87	116.23	116.10	115.27	114.80
31	113.23		119.18		120.95		122.10	118.00		116.35		116.10

Missouri River.—Boonville, Mo., 1873.

[illegible]

Missouri River.—Boonville, Mo., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	155.4	158.9	159.3	159.6	157.7	157.4	159.5	155.6	155.4	156.47	153.64	154.47
2	155.5	159.1	159.4	159.4	157.6	157.3	159.5	155.6	155.4	156.14	153.81	154.22
3	156.1	159.1	159.9	158.8	158.9	157.3	159.5	155.5	155.4	156.06	153.81	153.98
4	156.1	159.0	160.3	158.6	159.2	157.3	160.0	155.4	155.5	155.89	153.81	153.89
5	156.2	159.1	160.9	158.5	159.3	157.2	160.0	155.4	155.5	155.89	153.81	153.64
6	156.2	159.1	161.6	157.7	158.7	157.3	160.0	155.4	.....	155.72	153.81	153.38
7	156.1	159.1	161.8	157.9	158.7	155.4	160.3	155.4	.....	155.72	153.81	153.38
8	156.1	159.0	161.8	158.1	158.7	155.6	160.6	155.4	.....	155.72	153.81	153.38
9	156.1	158.5	161.4	157.9	158.1	160.3	160.7	155.4	.....	155.72	153.81	153.47
10	156.1	158.1	161.9	157.6	158.1	161.4	160.7	155.3	.....	155.72	153.81	153.64
11	156.1	157.7	159.9	157.4	158.1	162.3	160.6	155.3	.....	155.72	153.81	153.81
12	156.1	157.5	159.0	157.2	156.5	163.1	160.3	155.3	.....	155.72	153.81	153.89
13	155.9	157.6	158.1	157.1	156.5	163.2	159.9	155.3	.....	155.72	153.81	153.72
14	155.7	157.9	157.0	156.9	156.5	163.4	159.3	155.3	.....	155.72	153.81	153.64
15	155.7	158.1	156.3	156.5	155.9	163.7	158.9	155.3	.....	155.72	153.81	153.55
16	155.4	158.3	156.6	156.3	.....	163.7	158.4	155.3	.....	155.72	153.81	153.55
17	155.2	158.4	156.6	156.6	155.9	.....	157.9	155.3	.....	155.72	153.81	153.47
18	155.4	158.7	156.6	157.0	155.9	164.3	157.2	155.3	.....	155.47	153.81	153.47
19	156.2	159.0	156.5	157.3	155.9	164.3	157.0	155.2	.....	155.30	153.81	153.47
20	156.6	159.0	156.4	157.6	155.7	164.3	156.2	155.2	.....	154.98	153.81	153.47
21	157.2	159.1	156.6	159.6	155.6	163.6	155.6	155.1	.....	154.81	153.81	153.47
22	157.2	159.3	157.6	159.8	155.6	163.6	155.4	155.1	.....	154.55	153.81	153.38
23	157.2	159.5	158.3	159.6	155.6	163.1	155.3	155.1	.....	154.30	153.81	153.30
24	157.3	159.6	159.1	159.4	155.6	161.4	155.3	155.1	.....	154.14	153.81	153.14
25	157.7	159.6	159.6	159.1	155.6	160.9	155.3	155.1	.....	153.89	153.81	153.06
26	158.1	159.3	159.9	159.6	157.1	160.3	156.9	155.1	.....	153.89	153.81	152.89
27	158.4	159.1	159.6	159.6	157.9	160.0	156.6	155.1	.....	153.89	154.38	152.55
28	158.6	159.1	159.4	159.3	158.2	160.1	156.7	155.1	.....	153.89	154.72	152.38
29	158.6	159.1	157.1	159.1	157.9	159.7	156.2	155.1	.....	153.72	154.89	152.22
30	158.6	158.6	158.6	158.1	157.7	.....	156.0	155.2	.....	153.72	154.64	152.06
31	158.6	158.6	158.6	158.1	157.5	.....	155.9	155.3	.....	153.72	151.89	151.89

Missouri River.—Boonville, Mo., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	151.89	152.72	154.30	157.55	165.38	159.72	166.30	168.77	161.44	159.94	157.85	155.19
2	151.98	152.72	154.38	158.55	165.89	159.89	166.22	168.19	162.02	159.85	157.85	155.36
3	152.06	152.72	154.47	159.38	165.38	159.47	166.14	167.52	162.44	159.68	157.85	155.60
4	152.14	152.72	154.55	159.81	164.89	161.06	166.72	166.02	162.19	159.68	157.85	155.52
5	152.14	152.72	154.64	159.89	164.30	162.30	167.81	164.94	162.44	159.52	157.77	155.60
6	152.14	152.72	154.64	159.89	163.89	162.98	168.89	164.19	162.68	159.44	157.68	155.68
7	152.22	152.72	154.64	159.38	163.38	162.72	169.72	163.68	163.28	159.36	157.68	155.77
8	152.30	152.72	154.64	159.22	163.06	162.72	171.85	164.52	164.60	159.28	157.68	155.85
9	152.38	152.72	154.64	159.30	163.06	162.72	171.68	164.19	165.11	159.19	157.68	156.11
10	152.38	152.72	155.14	159.47	162.55	162.89	171.77	162.60	164.68	159.19	157.60	156.19
11	152.47	152.72	155.38	159.55	162.06	162.64	171.19	162.11	164.02	159.11	157.60	156.11
12	152.47	152.72	155.55	159.55	161.55	162.30	171.02	161.94	163.85	158.94	157.60	156.02
13	152.55	152.72	155.89	160.38	161.30	162.14	170.28	161.60	163.60	158.85	157.60	155.60
14	152.64	152.72	156.14	160.22	161.06	161.98	170.60	161.19	163.36	158.77	157.60	155.44
15	152.72	152.72	156.55	160.06	160.72	161.81	170.36	161.19	163.02	158.68	157.60	155.36
16	152.72	152.72	156.72	160.22	160.30	161.47	170.02	161.11	162.94	158.68	157.52	155.36
17	152.72	152.72	156.55	160.30	159.98	161.64	168.68	161.19	162.68	158.68	157.62	155.52
18	152.72	152.72	156.06	160.55	159.81	161.55	168.28	161.19	162.44	158.60	157.44	155.44
19	152.72	152.72	155.89	161.22	159.72	162.72	167.94	161.11	162.44	158.60	157.36	155.28
20	152.72	152.72	155.89	160.89	159.55	164.38	167.44	160.94	162.44	158.52	157.28	155.77
21	152.72	152.72	155.72	160.38	159.89	163.72	167.02	160.94	162.44	158.44	157.11	156.28
22	152.72	152.81	155.30	159.98	160.14	164.06	166.68	160.85	162.36	158.36	156.94	156.77
23	152.72	153.06	155.14	159.89	159.89	165.22	166.19	160.68	162.28	158.36	156.77	156.28
24	152.72	153.22	155.06	159.72	159.72	165.47	166.19	160.44	162.11	158.28	156.60	156.19
25	152.72	153.38	154.89	159.55	159.55	165.30	164.02	160.36	161.85	158.28	156.44	156.44
26	152.72	153.64	155.38	162.89	159.47	165.55	163.28	160.28	161.36	158.19	156.36	156.36
27	152.72	153.89	155.72	163.89	159.38	166.22	163.19	160.36	160.85	158.11	156.19	156.36
28	152.72	154.22	156.22	164.38	159.47	166.38	164.19	160.44	160.44	158.11	156.02	156.52
29	152.72		156.89	164.89	159.30	166.55	165.36	160.60	160.19	158.02	155.85	156.68
30	152.72		157.38	165.30	159.30	166.47	166.02	160.77	160.02	158.02	155.77	156.85
31	152.72		157.55	159.47	159.47	167.68	167.68	161.02		157.94		156.94

Missouri River.—Boonville, Mo., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	157.19	156.19	155.77	163.85	165.52	162.52	167.77	162.77	161.02	161.19	158.94	156.85
2	159.85	156.11	155.77	164.28	164.85	162.68	167.77	162.60	160.60	161.02	159.19	156.85
3	160.68	155.77	155.68	165.02	163.85	162.52	167.94	162.52	160.60	160.77	159.60	156.60
4	161.19	155.44	155.52	165.36	163.52	162.44	168.85	162.36	160.68	160.77	159.85	156.44
5	161.02	155.02	155.44	165.44	163.44	163.02	169.77	162.19	161.28	160.60	160.85	156.28
6	160.85	154.68	155.68	165.36	164.44	164.02	169.77	162.02	162.02	160.52	161.19	156.19
7	160.77	154.52	155.36	165.36	168.68	164.02	169.68	161.68	163.44	160.28	161.11	157.02
8	160.60	154.85	155.52	165.19	170.19	163.68	168.77	161.36	164.36	160.19	161.02	156.44
9	160.36	155.19	155.77	164.77	169.94	164.36	168.19	161.19	164.94	160.11	160.85	158.68
10	159.85	155.52	156.02	164.52	169.94	165.02	168.11	161.19	165.02	159.94	160.19	158.36
11	159.19	155.68	156.68	164.28	169.44	165.11	167.94	161.11	165.36	159.85	159.85	158.11
12	159.02	156.02	158.44	164.02	168.94	165.19	167.94	161.19	165.52	159.68	159.68	157.85
13	158.85	156.77	158.85	165.11	168.36	166.11	167.68	161.44	165.60	159.60	159.60	157.68
14	158.52	157.19	158.85	166.52	167.36	167.02	167.44	161.66	165.68	159.60	159.52	157.60
15	158.02	157.02	158.77	167.02	166.36	167.77	167.28	161.44	165.68	159.52	159.19	157.52
16	157.60	156.94	158.44	168.02	165.36	167.60	167.02	161.19	165.77	159.44	158.85	157.52
17	157.19	156.77	158.60	168.68	164.28	169.36	166.60	161.11	165.52	159.36	158.68	157.52
18	157.02	156.28	159.19	169.19	163.36	168.60	165.85	161.19	165.19	159.28	158.60	157.52
19	157.19	156.02	159.60	169.44	163.02	167.85	165.52	161.52	164.85	159.19	158.52	157.36
20	157.60	155.68	160.11	169.19	162.77	167.52	165.19	162.19	164.52	159.19	158.52	157.28
21	158.02	155.44	160.02	168.68	162.85	167.28	164.94	162.94	163.94	159.11	158.52	157.19
22	158.28	155.28	159.85	168.02	162.77	167.36	164.68	162.68	163.44	159.02	158.36	157.19
23	158.11	155.44	159.68	167.85	162.02	167.36	164.19	162.52	163.02	158.94	158.19	157.11
24	157.85	155.52	159.60	168.02	161.44	167.77	164.02	163.19	163.02	158.85	158.02	157.02
25	157.44	155.68	159.94	168.19	161.28	169.44	163.85	163.19	162.94	158.68	157.94	156.85
26	157.19	155.52	160.11	168.11	161.11	169.52	163.68	162.68	162.60	158.60	157.85	156.77
27	157.02	155.60	159.85	167.44	160.94	169.02	163.44	162.52	162.36	158.52	157.60	156.68
28	156.68	155.77	160.60	167.19	160.77	167.60	163.28	162.36	162.36	158.44	157.36	156.60
29	156.52	155.94	162.11	165.36	160.77	167.85	163.19	161.85	161.94	158.36	157.11	156.52
30	156.36		162.94	165.02	161.19	169.34	163.11	161.19	161.36	158.44	156.94	156.52
31	156.28		163.68		162.44		163.02	161.36		158.68		156.52

Missouri River.—Boonville, Mo., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	156.60	159.68	159.68	163.60	166.60	168.85	169.68	164.19	160.36	157.77	159.19	158.02
2	156.68	161.02	159.60	164.28	166.77	168.85	169.60	163.94	160.19	157.77	158.94	157.52
3	156.68	160.02	159.68	164.85	166.77	169.19	169.44	163.77	160.19	158.02	158.85	157.19
4	156.68	159.85	159.77	164.60	166.60	169.28	169.28	163.77	160.11	158.11	158.85	156.85
5	156.68	159.36	159.68	164.19	166.11	168.44	169.77	163.68	159.94	157.94	158.85	156.85
6	156.68	158.52	159.52	163.60	166.11	168.77	169.36	163.68	159.77	157.85	158.68	157.36
7	156.68	159.02	159.52	162.85	165.60	168.28	168.85	163.60	159.52	157.94	158.85	158.19
8	156.68	158.19	159.36	163.28	165.28	168.28	168.36	163.52	159.52	157.85	158.95	158.60
9	156.68	160.19	159.28	166.19	164.77	169.94	168.02	163.52	159.44	157.85	158.85	158.44
10	156.68	159.85	159.19	166.85	164.94	170.52	168.19	163.77	159.28	157.77	158.77	158.19
11	156.77	159.68	159.19	166.68	164.94	171.19	168.11	163.85	159.19	157.77	158.60	157.52
12	156.77	159.85	159.19	165.94	164.94	171.85	167.85	163.60	159.19	157.77	158.28	157.36
13	156.85	160.19	158.36	165.19	165.60	172.19	167.36	162.85	159.19	157.77	158.36	157.36
14	156.94	160.77	157.28	164.77	166.52	172.19	166.68	162.36	159.19	157.77	158.28	157.28
15	156.94	159.94	156.94	164.36	166.60	171.77	166.19	162.11	159.19	157.77	158.11	157.52
16	156.94	159.60	157.02	164.11	167.19	171.28	165.94	161.94	159.19	157.85	158.11	157.44
17	156.94	159.44	157.68	164.11	168.02	171.11	165.68	161.85	159.11	157.85	158.28	157.44
18	157.02	159.19	158.94	164.11	169.36	171.19	165.68	161.94	159.11	157.85	158.52	157.36
19	157.36	159.36	159.94	164.68	168.85	170.77	166.52	161.85	159.02	157.94	158.85	157.68
20	157.36	159.28	160.52	167.11	168.44	169.94	166.77	161.68	158.85	158.77	158.94	158.44
21	157.36	159.19	161.02	167.28	168.19	169.36	166.44	161.44	158.68	159.60	158.94	158.94
22	157.36	159.44	160.77	167.19	169.36	168.77	166.44	161.19	158.68	159.77	158.85	159.36
23	157.36	160.02	160.60	166.94	169.94	168.68	166.19	161.28	158.60	160.19	158.77	159.68
24	157.36	159.68	160.44	167.02	169.94	168.52	166.19	161.28	158.44	160.44	159.02	159.77
25	157.36	159.44	160.60	167.60	169.60	168.94	166.19	161.19	158.36	160.60	159.19	160.36
26	157.36	160.44	160.68	167.77	168.94	169.68	165.94	161.19	158.36	160.44	159.52	161.02
27	157.36	160.52	161.02	167.36	168.28	170.28	165.60	161.11	158.28	160.36	159.85	161.19
28	157.44	160.28	161.19	167.02	167.52	170.11	165.19	161.02	158.28	160.28	159.02	160.85
29	157.60		161.52	166.60	167.02	169.94	164.02	160.85	158.19	159.94	158.68	160.44
30	158.11		161.94	166.44	167.68	169.52	164.19	160.68	157.94	159.85	158.60	160.60
31	159.02		162.19		168.60		164.44	160.60		159.44		161.19

Missouri River.—Boonville, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	161.02	159.60	160.52	160.11	165.19	167.28	169.11	167.28	160.54	159.04	157.49	157.59
2	160.60	159.68	161.28	161.44	165.19	167.19	169.02	166.60	160.44	158.89	157.49	157.59
3	160.02	159.36	161.85	161.60	165.11	167.19	169.19	166.28	160.29	158.79	157.49	157.59
4	159.44	158.68	162.36	161.44	165.19	167.11	169.28	165.77	160.19	158.79	157.54	157.54
5	159.02	158.28	162.11	160.85	165.60	167.02	169.44	165.28	160.09	158.79	157.59	157.49
6	158.19	158.02	161.36	160.68	165.68	166.94	169.44	165.02	160.09	158.69	157.59	157.39
7	157.02	157.85	161.02	160.60	165.77	167.11	169.44	164.77	159.94	158.69	157.59	157.39
8	156.36	157.68	161.02	160.60	165.28	167.68	169.02	164.52	159.89	158.59	157.49	157.39
9	155.77	157.68	161.85	161.36	164.77	168.28	168.85	164.36	159.94	158.59	157.49	157.29
10	155.60	158.28	163.36	161.02	164.36	168.68	168.68	164.19	159.99	158.34	157.59	157.29
11	155.36	159.02	164.02	161.19	163.94	168.68	168.44	164.19	159.99	158.24	157.59	157.29
12	155.36	160.11	163.36	161.11	163.44	168.68	168.28	164.02	159.99	158.19	157.59	157.19
13	155.52	160.68	163.02	161.02	163.28	168.85	168.19	163.85	160.14	158.29	157.49	157.19
14	155.85	160.77	162.77	161.28	163.19	168.85	168.28	163.77	160.29	158.24	157.49	157.09
15	156.19	160.77	162.52	161.77	162.94	168.85	168.36	163.69	160.19	158.14	157.49	156.09
16	156.36	161.02	162.28	161.77	162.60	168.77	167.77	163.54	160.04	158.09	157.49	155.94
17	156.44	161.52	161.77	161.68	162.44	168.19	167.36	163.19	159.84	157.99	157.59	156.44
18	156.52	161.52	161.19	161.52	162.52	167.68	167.19	162.84	159.79	157.99	157.69	155.94
19	156.68	161.11	160.85	161.28	164.19	167.36	166.68	162.59	159.74	157.99	157.69	154.94
20	156.85	161.11	160.68	161.52	164.85	167.28	166.36	162.24	159.64	157.99	157.79	154.69
21	156.94	162.36	160.44	161.60	164.02	167.28	166.36	162.14	159.44	157.99	157.89	154.59
22	157.60	163.94	160.19	161.77	163.77	167.52	166.28	161.79	159.39	157.89	157.89	154.59
23	158.19	164.52	159.94	161.85	163.44	168.02	166.19	161.69	159.24	157.79	157.89	154.59
24	158.19	163.94	159.68	161.94	163.36	168.19	165.85	161.59	159.19	157.79	157.79	154.49
25	158.19	162.94	159.36	161.44	163.60	168.19	165.44	161.54	159.19	157.69	157.69	154.94
26	158.36	162.02	158.85	161.19	164.44	168.19	165.44	161.49	159.09	157.69	157.69	156.24
27	159.02	161.44	158.85	161.11	166.02	168.44	165.36	161.39	159.09	157.74	157.59	156.29
28	159.60	160.85	159.02	162.85	166.36	168.68	167.19	161.14	159.14	157.74	157.59	156.19
29	160.19		159.02	164.68	166.44	168.77	168.28	161.09	159.19	157.68	157.59	156.19
30	159.44		158.77	165.19	166.60	169.11	168.60	160.94	159.19	157.59	157.59	156.19
31	159.36		158.68		166.77		168.02	160.74		157.59		156.19

Missouri River.—Boonville, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	156.19	156.94	156.09	161.09	160.59	163.24	170.19	164.14	159.68	157.85	157.36	160.44
2	156.19	156.89	155.79	160.99	160.49	163.64	170.04	164.19	159.68	157.85	157.36	160.68
3	156.19	156.89	155.64	160.64	160.49	163.69	169.54	164.19	159.60	157.85	157.36	160.60
4	156.19	156.64	155.64	160.59	160.54	163.74	168.99	164.24	159.52	157.94	157.36	160.02
5	156.29	156.89	155.74	161.14	160.84	164.14	168.79	164.34	159.44	157.94	157.36	159.44
6	156.29	156.49	156.14	161.29	161.29	164.59	168.49	164.24	159.44	157.85	157.36	159.19
7	156.39	156.49	156.34	161.19	161.39	164.69	168.19	163.89	159.36	157.85	157.36	160.36
8	156.39	156.64	157.19	162.54	161.54	164.54	168.14	163.64	159.19	157.77	157.52	161.28
9	156.39	156.69	157.39	164.49	161.74	164.29	167.94	163.24	159.19	157.77	157.68	161.77
10	156.39	156.84	157.14	165.64	161.74	164.54	167.59	162.94	159.19	157.85	157.85	161.68
11	156.39	158.44	157.09	166.19	161.59	164.89	167.19	162.79	159.19	157.94	158.11	161.36
12	156.29	157.34	157.69	166.69	161.44	164.79	166.79	162.64	159.28	157.94	158.77	160.85
13	156.24	157.69	159.29	166.49	161.39	164.99	166.24	162.19	159.28	157.85	160.02	160.19
14	156.19	156.79	159.29	165.44	161.54	165.14	166.19	162.09	159.52	157.85	161.85	159.36
15	156.19	155.79	159.09	164.44	161.59	165.34	166.19	161.99	159.28	157.85	163.36	158.19
16	156.19	155.24	159.29	163.99	161.59	165.74	165.94	161.69	159.02	157.85	163.60	157.36
17	156.19	155.19	159.64	163.34	161.59	166.44	165.44	161.44	158.94	157.85	163.36	156.77
18	156.19	155.49	159.64	162.79	161.49	166.89	165.24	161.24	158.77	157.94	162.85	156.36
19	156.19	155.84	159.44	162.44	161.49	167.59	165.19	161.14	158.60	157.94	162.11	156.11
20	156.34	156.19	159.09	162.09	161.74	167.94	164.99	161.09	158.52	157.85	161.52	155.60
21	156.49	156.19	158.64	161.74	161.94	167.79	164.74	160.99	158.44	157.85	160.94	156.19
22	156.64	156.29	158.44	161.44	161.74	167.34	164.84	160.74	158.36	157.94	160.44	156.77
23	156.74	156.89	158.04	161.24	161.69	167.04	165.09	160.59	158.28	157.94	159.85	157.28
24	156.89	156.79	157.74	161.04	161.69	166.44	165.19	160.49	158.19	157.85	159.52	158.11
25	156.89	156.49	157.74	160.99	161.69	167.29	165.79	160.34	158.11	157.77	159.28	158.11
26	156.94	156.09	157.94	160.99	161.79	168.09	165.54	160.19	158.02	157.68	159.11	158.11
27	156.99	156.09	157.94	160.94	162.04	168.64	164.69	160.19	157.94	157.60	158.85	158.11
28	157.24	156.09	157.59	160.79	162.34	169.44	164.39	160.19	157.94	157.52	158.68	158.19
29	157.99		157.34	160.79	162.34	169.89	164.24	160.09	157.85	157.44	158.77	158.36
30	158.14		158.79	160.69	162.19	169.94	164.19	159.99	157.85	157.44	159.77	158.52
31	157.09		160.64		162.29		164.09	159.89		157.44		158.52

Missouri River.—Boonville, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	158.52	157.52	159.68	160.77	159.68	162.02	164.94	163.52	163.94	159.77	158.19	155.52
2	158.52	158.11	159.52	160.19	159.52	161.60	165.28	163.44	164.11	159.77	158.19	155.52
3	158.52	157.94	159.02	159.52	159.44	161.28	165.60	163.36	163.36	159.77	158.11	155.44
4	159.19	157.19	158.52	159.68	159.36	161.28	166.36	163.28	162.85	159.77	158.11	155.44
5	160.85	156.68	157.94	160.11	159.36	161.28	166.36	163.19	163.02	159.68	158.02	155.44
6	161.02	156.52	157.28	160.60	159.36	161.94	166.44	163.11	163.68	160.60	158.02	155.36
7	161.28	156.44	157.11	161.19	159.44	162.52	166.36	163.02	164.19	159.85	158.02	155.36
8	161.68	156.44	156.94	162.36	159.36	163.68	166.44	162.94	164.02	159.19	158.11	155.28
9	161.44	156.44	157.44	164.19	159.19	163.52	166.68	162.85	163.36	159.11	158.19	155.28
10	161.19	156.44	157.68	164.02	159.11	163.28	167.02	162.77	162.68	158.94	158.19	155.19
11	160.85	157.36	157.68	163.44	159.02	163.11	167.28	162.68	162.19	158.85	158.77	154.94
12	160.36	158.19	157.60	162.60	158.94	163.02	167.36	162.60	161.77	158.77	158.44	154.94
13	159.85	158.85	157.52	161.68	158.85	162.85	167.44	162.52	161.52	158.68	158.60	155.02
14	159.36	159.68	157.44	161.52	158.77	162.68	167.36	162.44	161.28	158.60	158.60	155.28
15	158.85	159.85	157.36	161.36	158.77	162.60	167.19	162.19	161.02	158.52	158.60	155.77
16	158.52	159.77	157.44	161.19	158.77	162.68	167.19	161.85	160.85	158.60	158.52	156.19
17	158.02	159.28	157.36	161.02	158.77	162.77	167.28	161.36	160.68	158.68	158.44	156.36
18	157.52	158.77	157.02	160.85	158.68	163.52	167.11	161.11	160.60	158.77	158.36	156.60
19	157.44	158.28	156.44	160.68	158.77	164.36	166.85	160.94	160.44	158.77	158.19	156.68
20	157.36	157.94	156.11	160.19	158.85	164.36	166.77	160.85	160.28	158.85	157.85	156.85
21	157.36	158.02	155.85	160.02	158.60	164.36	166.68	160.77	160.02	158.94	157.19	156.94
22	157.36	158.19	155.94	160.02	158.68	164.36	166.68	160.60	159.94	158.94	156.68	156.94
23	157.28	158.19	156.11	159.94	158.68	164.52	166.68	160.68	159.85	158.85	156.19	156.85
24	157.36	157.68	156.36	159.85	158.60	165.11	166.68	160.60	159.77	158.77	156.02	156.36
25	157.28	157.68	156.52	159.68	158.60	165.36	166.19	160.77	159.68	158.68	155.94	156.19
26	157.28	158.02	156.68	160.28	158.52	165.02	165.60	161.36	159.94	158.60	155.85	156.19
27	157.19	158.94	157.44	161.19	159.36	164.85	165.02	161.52	159.85	158.52	155.77	156.19
28	157.19	159.19	160.19	161.11	160.02	164.77	164.52	161.85	159.68	158.44	155.68	156.19
29	157.11	159.36	161.28	160.77	160.68	164.68	164.11	162.02	159.77	158.36	155.60	156.19
30	157.19		161.85	160.28	161.52	164.94	163.85	162.19	159.77	158.28	155.52	156.19
31	157.28		161.36		162.11		163.60	162.36		158.28		156.77

Missouri River.—Boonville, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	157.28	.....	161.94	169.19	173.60	165.19	168.19	162.60	159.84	160.26	161.26	158.84
2			162.19	169.19	174.60	166.52	167.68	162.44	159.76	160.52	161.35	159.35
3			162.19	169.02	175.11	167.19	167.85	162.28	159.68	159.84	161.52	159.09
4			162.11	167.94	174.85	167.28	168.02	162.11	159.60	159.26	161.60	158.76
5		157.28	162.19	168.11	173.94	167.02	167.52	161.94	159.60	159.18	161.43	158.60
6		157.85	162.28	168.77	172.36	166.85	166.85	161.85	159.52	159.76	161.26	158.52
7		161.68	161.94	168.85	169.68	166.68	166.28	161.77	159.52	160.43	161.09	158.43
8		164.36	161.52	168.85	168.19	166.52	165.68	161.68	159.43	161.01	160.92	158.43
9		165.36	161.36	168.85	167.36	166.02	165.11	161.60	159.43	161.18	160.84	158.35
10		164.36	161.68	169.11	167.02	165.94	164.85	161.52	159.52	161.09	160.76	158.35
11		163.36	162.36	169.36	167.44	166.44	164.68	161.60	159.52	160.92	161.26	158.26
12		162.52	163.68	169.68	167.28	167.44	164.52	161.43	159.60	160.68	162.09	158.43
13		161.68	164.68	170.02	167.02	167.28	165.02	161.26	159.68	160.43	162.35	158.76
14		160.85	165.36	170.19	166.36	167.02	165.19	161.18	159.68	160.26	162.35	159.09
15		160.19	165.52	170.28	166.19	166.68	165.28	161.09	159.60	160.76	162.26	159.01
16		159.44	166.52	169.77	166.19	166.85	165.36	161.01	159.52	161.43	162.26	158.84
17		158.77	167.68	168.77	166.11	167.36	165.19	160.92	159.43	162.18	162.26	158.43
18		158.11	167.68	167.85	166.02	168.28	165.11	160.84	159.43	162.76	162.26	158.26
19		157.60	167.52	167.68	165.85	168.11	164.94	160.76	159.43	163.35	162.43	158.43
20		157.60	167.19	167.77	165.77	167.94	164.68	160.76	159.35	163.92	162.26	158.68
21		157.77	166.68	168.60	165.28	167.68	164.44	160.68	159.35	164.26	161.84	159.18
22		158.11	165.68	169.28	165.77	167.44	164.02	160.52	159.26	164.35	161.26	159.76
23		157.77	165.36	170.02	166.68	167.28	163.68	160.43	159.18	164.43	160.68	160.09
24		157.77	165.19	170.28	166.85	167.19	163.52	160.26	159.09	164.43	160.09	159.84
25		157.85	165.19	170.44	166.68	167.11	163.44	160.09	159.09	164.26	159.52	159.76
26		158.36	165.02	170.68	166.11	167.19	163.28	159.92	159.01	163.43	158.92	159.68
27		160.52	165.19	170.85	165.60	167.11	163.11	159.76	159.01	162.84	158.60	159.68
28		161.36	165.44	171.19	165.11	166.68	163.11	159.68	159.01	162.26	158.43	159.52
29			166.02	171.68	164.77	166.68	163.02	159.68	159.09	161.68	158.26	159.35
30			168.28	172.60	164.68	167.60	162.94	159.76	159.43	161.43	158.18	159.26
31			169.02	.....	164.60	.....	162.94	159.84	.....	161.26	.....	159.18

Missouri River.—Boonville, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	159.01	157.01	158.09	159.60	163.76	165.76	171.68	163.26	159.60	157.35	157.92	157.18
2	158.84	156.84	158.68	159.52	162.84	165.26	172.68	163.76	159.60	157.26	157.76	157.09
3	158.76	156.68	159.18	159.35	162.68	164.68	172.43	164.26	159.52	157.18	157.60	157.09
4	158.68	156.68	159.52	159.26	162.76	164.92	172.09	164.09	159.43	157.09	157.52	157.09
5	158.43	156.76	159.68	159.26	163.01	164.84	171.60	163.60	159.35	157.01	157.43	157.01
6	157.92	156.84	159.76	159.35	163.26	164.68	171.09	163.09	159.26	157.01	157.35	156.92
7	157.43	156.92	159.84	159.52	163.18	164.43	170.26	162.76	159.18	156.92	157.43	156.43
8	156.92	157.01	159.84	160.01	162.84	164.18	169.43	162.60	159.09	156.84	157.60	155.60
9	156.43	157.09	160.43	161.26	163.26	163.60	168.60	162.43	159.01	156.92	157.52	155.09
10	156.09	157.18	161.60	162.26	163.43	163.09	167.76	162.26	158.92	157.01	157.60	154.60
11	155.92	157.35	161.43	163.09	163.35	162.92	167.26	162.09	158.84	156.92	157.68	154.09
12	156.26	157.43	160.76	163.68	163.26	162.76	166.76	162.01	158.84	156.84	157.76	153.92
13	156.76	157.43	159.92	164.84	163.18	163.09	166.26	161.92	158.76	156.92	157.76	154.01
14	157.26	157.52	159.43	166.26	163.09	163.60	165.84	161.84	158.68	157.09	157.68	154.09
15	157.76	157.76	159.68	166.84	162.92	164.26	166.01	161.68	158.60	157.35	157.60	154.01
16	157.76	158.26	160.26	166.01	163.01	165.18	166.18	161.43	158.60	157.84	157.60	154.09
17	157.70	158.76	160.60	164.76	163.26	165.52	166.35	161.18	158.09	158.18	157.76	153.60
18	157.35	160.26	160.52	164.26	163.76	165.60	166.52	160.92	157.60	158.35	157.84	153.10
19	156.84	161.43	160.26	163.68	163.60	166.09	166.68	160.76	157.76	158.43	157.76	153.34
20	156.09	161.76	159.92	163.43	163.43	166.92	166.52	160.68	157.84	158.35	157.68	153.84
21	155.68	161.84	159.84	163.26	163.26	167.92	166.01	160.60	157.92	158.18	157.60	154.43
22	155.43	161.18	159.84	163.68	163.84	168.18	165.52	160.52	157.84	158.09	157.52	154.92
23	155.26	159.84	159.76	164.26	164.43	167.92	165.18	160.43	157.68	157.92	157.52	154.43
24	155.43	158.84	159.60	164.92	164.68	167.84	164.76	160.35	157.60	157.76	157.60	154.18
25	155.92	158.18	159.43	164.84	164.01	168.26	164.43	160.18	157.52	157.60	157.52	154.09
26	156.60	157.76	159.35	164.76	163.68	168.76	164.09	160.01	157.52	157.52	157.60	154.09
27	156.92	157.68	159.26	164.76	164.26	169.01	163.76	159.84	157.43	157.68	157.68	154.18
28	157.09	157.84	159.35	164.68	164.43	169.18	163.52	159.76	157.35	157.84	157.60	154.26
29	157.18		159.43	164.35	164.92	169.52	163.35	159.68	157.35	158.01	157.43	154.43
30	157.26		159.60	164.01	165.43	170.01	163.18	159.68	157.43	158.09	157.26	154.43
31	157.18		159.68		165.92		162.92	159.68		158.01		154.60

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	154.52		163.26	162.18			173.01					
2	154.52		162.76	162.01			172.52					
3	153.92		162.18	161.68			171.68					
4	153.76		161.52	161.60			170.68					
5	153.68		161.68	162.09			169.76					
6	153.60		162.26	162.43			168.92					
7	153.52		162.68	162.26			168.18					
8	153.68		162.52	161.92								
9	153.84		162.26	161.68								
10	154.09		162.18	161.60								
11	154.26		161.92	161.68								
12	154.43	157.68	161.76	161.84		167.43						
13	154.60	160.63	162.76	161.76		167.92						
14	154.68	161.92	162.18	161.92		168.76						
15	154.92	165.09	161.92	161.84		169.60						
16	155.01	167.26	162.01	161.68		170.76						
17	155.09	166.92	162.18	162.09		171.92						
18	155.18	166.26	162.09	162.60		172.84						
19	154.76	165.60	161.92	163.43		173.35						
20	156.35	164.92	161.76	164.26		173.81						
21	155.92	164.35	161.52	165.09		174.35						
22	157.68	163.76	161.43	164.60		174.84						
23		163.18	161.26	164.01		175.09						
24		162.68	161.76	163.26		174.60						
25		163.18	161.43	162.52		174.35						
26		163.68	161.09	161.68		174.09						
27		163.43	160.84	161.52		174.01						
28		163.52	161.68	161.26		173.92						
29			162.68	161.18		173.68						
30			162.60	161.43		173.52						
31			162.35									

Missouri River.—Boonville, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	160.88	159.08	164.78	163.33	163.18	166.28	164.78	161.93	163.68	160.08	159.07
2	.....	161.18	159.08	164.78	163.58	163.28	165.93	164.78	162.13	163.18	160.08	158.68
3	.....	160.43	159.00	164.88	164.58	163.38	165.68	164.43	162.58	162.48	160.03	158.33
4	.....	159.83	158.68	165.33	165.03	163.48	165.98	164.18	162.13	161.73	159.98	158.05
5	.....	160.13	158.53	165.48	165.08	163.68	166.33	163.68	161.73	161.58	159.98	158.03
6	.....	160.53	158.28	166.08	165.25	164.15	166.68	163.53	161.38	161.68	159.88	158.90
7	156.98	159.48	158.33	166.98	165.08	164.28	166.78	163.38	161.53	161.78	159.83	159.38
8	156.65	158.68	158.58	167.28	164.88	164.33	166.48	163.03	161.48	161.88	159.78	159.68
9	156.48	158.15	158.78	167.28	164.68	164.98	166.38	162.68	161.28	162.13	159.68	159.78
10	156.63	158.08	158.78	167.58	164.78	165.63	166.18	162.33	161.15	162.33	159.43	159.78
11	156.80	158.08	158.78	167.38	164.78	165.93	165.83	162.28	161.08	162.38	159.20	160.05
12	157.23	157.68	158.88	166.93	164.73	165.93	165.78	162.28	161.35	162.28	159.15	160.28
13	157.43	158.43	159.08	166.03	163.93	165.73	165.98	162.13	161.43	162.18	159.08	159.78
14	157.60	158.28	159.58	165.33	163.50	165.58	166.28	161.83	160.98	162.15	159.03	159.23
15	157.73	157.73	159.93	165.13	163.25	165.68	167.28	161.73	160.88	162.03	158.98	158.91
16	157.83	157.68	160.08	164.78	163.08	165.83	167.48	161.68	160.78	161.83	158.88	158.63
17	157.90	157.63	160.15	164.50	163.08	165.88	166.93	161.68	160.68	161.78	158.78	158.35
18	157.98	158.08	160.58	164.23	163.18	166.03	166.28	161.98	160.60	161.63	158.78	158.28
19	158.08	158.83	161.73	164.08	163.08	166.58	165.68	162.48	160.68	161.33	158.73	158.15
20	158.23	158.88	162.58	164.13	162.93	167.03	165.18	161.98	160.80	161.03	158.73	158.08
21	158.38	159.33	162.58	164.43	162.73	167.08	164.73	161.73	160.78	161.23	158.68	158.03
22	158.43	159.38	162.70	164.93	162.68	167.18	164.43	161.68	160.73	162.43	158.78	157.98
23	158.58	159.33	163.08	165.15	162.38	167.18	164.28	161.58	160.78	162.68	159.83	157.93
24	158.68	159.25	163.08	165.18	162.28	167.33	164.20	161.48	161.53	162.18	160.38	157.83
25	158.68	158.83	163.38	164.68	162.28	167.48	164.63	161.88	162.38	161.63	160.03	157.78
26	158.68	158.88	166.03	164.18	162.38	167.55	164.78	162.08	162.83	161.03	159.78	157.78
27	158.68	159.28	167.18	163.58	162.70	167.45	165.03	162.50	163.03	160.78	159.63	157.75
28	158.68	159.18	166.08	163.25	162.78	167.23	165.08	162.63	163.88	160.78	159.18	158.00
29	158.73	159.13	165.38	163.03	162.78	167.03	165.08	162.28	164.18	160.78	158.83	158.53
30	159.03		165.03	162.53	162.68	166.68	164.98	162.25	164.38	160.70	158.33	161.38
31	160.18		164.78		162.83		164.88	162.18		160.38		166.13

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	168.00	162.75	162.55	161.75	165.77	163.90	166.92	164.75	161.80	159.43	159.25	158.40
2	167.05	162.75	162.90	161.90	165.57	164.10	166.60	164.75	162.07	159.33	159.25	158.40
3	166.05	162.75	164.20	162.40	165.30	164.30	166.45	164.60	162.25	159.22	159.30	158.35
4	165.75	162.95	165.90	162.67	164.98	164.47	166.35	164.32	162.25	159.13	159.45	158.30
5	165.65	163.20	167.15	162.75	164.17	164.75	166.25	164.00	162.25	159.05	159.50	158.25
6	165.75	164.45	167.75	162.40	163.78	164.78	166.25	163.80	162.90	158.97	159.80	158.20
7	166.05	165.62	166.85	162.07	163.30	165.40	166.25	163.75	162.40	158.87	160.35	158.10
8	166.22	166.22	166.25	161.83	163.25	165.95	166.25	163.83	162.40	158.78	160.35	157.90
9	166.15	167.75	166.25	162.07	163.17	165.55	166.25	163.85	163.00	158.75	159.90	157.70
10	166.15	167.02	165.65	162.15	162.67	165.30	166.17	163.87	162.50	158.75	159.35	157.50
11	166.15	165.80	165.35	162.10	162.32	165.45	166.07	164.00	162.75	158.67	158.95	156.90
12	165.92	165.45	164.90	161.87	162.02	166.20	165.90	164.57	162.35	158.57	158.75	156.42
13	165.72	164.20	164.65	161.87	161.73	166.95	165.77	165.75	162.25	158.55	158.75	155.95
14	165.55	164.07	165.75	162.25	161.60	167.75	165.57	165.00	162.50	158.55	158.87	155.75
15	165.30	164.05	165.00	162.25	161.40	168.45	165.47	164.40	162.32	158.63	158.95	155.75
16	165.02	163.97	164.40	162.60	161.25	168.35	165.45	163.70	162.07	158.72	158.95	155.63
17	164.80	163.87	164.25	163.05	161.35	168.30	165.37	163.10	161.98	158.75	158.95	155.55
18	164.75	163.73	164.25	163.20	161.70	168.60	165.22	162.65	161.87	158.83	158.83	155.40
19	164.57	163.55	163.97	162.95	161.85	168.95	165.05	162.32	161.72	158.85	158.70	155.62
20	164.20	163.32	163.67	162.32	161.40	169.85	164.90	162.00	161.53	159.25	158.65	155.95
21	163.80	163.25	163.35	161.75	162.50	170.20	164.72	161.82	161.43	159.75	158.60	156.35
22	163.55	163.17	162.90	162.07	162.90	170.40	164.42	161.67	161.00	159.80	158.60	156.75
23	163.15	163.00	162.40	163.52	163.02	170.12	164.25	161.55	160.70	159.35	158.55	157.07
24	162.97	162.87	162.03	163.75	162.70	169.65	164.15	161.30	160.50	158.90	158.55	156.25
25	162.95	162.70	161.50	163.85	162.65	169.40	164.40	161.25	160.20	158.83	158.55	156.90
26	162.90	162.53	161.25	164.37	162.90	169.23	164.70	161.18	160.02	158.75	158.50	157.45
27	162.85	162.40	161.85	164.97	163.35	169.05	164.80	161.15	159.93	158.85	158.50	157.25
28	162.85	162.23	162.40	164.80	163.65	168.90	165.05	161.07	159.82	159.20	158.45	157.25
29	162.80		162.12	164.55	164.13	168.37	164.92	161.20	159.70	159.55	158.45	157.40
30	162.77		161.75	164.95	163.67	167.65	164.85	161.40	159.53	159.85	158.40	158.15
31	162.75		161.75		163.75		164.82	161.60		159.60		158.65

Missouri River.—Glasgow, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									183.60	182.22	180.75	180.87
2									183.47	181.97	180.69	180.93
3									183.36	181.86	180.70	180.92
4									183.31	181.81	180.73	180.81
5									183.25	181.78	180.73	180.75
6									183.21	181.79	180.70	180.67
7									183.02	181.78	180.65	180.68
8									183.00	181.84	180.67	180.72
9									183.11	181.66	180.67	180.69
10									183.07	181.50	180.71	180.61
11									183.17	181.40	180.72	180.55
12									183.21	181.44	180.68	180.52
13								187.45	183.45	181.55	180.68	180.55
14								187.29	183.60	181.49	180.66	180.55
15								187.27	183.40	181.34	180.71	182.50
16								186.99	183.20	181.27	180.77	185.10
17								186.50	183.08	181.17	180.79	185.97
18									183.02	181.10	180.86	184.95
19								185.95	182.93	181.21	180.90	184.35
20								185.45	182.80	181.14	181.00	184.21
21								185.31	182.67	181.06	181.03	184.12
22								185.04	182.54	181.04	181.04	183.77
23								184.87	182.37	181.00	181.02	183.56
24								184.75	182.32	180.87	180.95	183.00
25								184.68	182.38	180.87	180.90	183.00
26								184.57	182.20	180.90	180.85	182.77
27								184.44	182.20	180.91	180.87	182.40
28								184.27	182.30	180.89	180.87	182.24
29								184.10	182.41	180.80	180.82	182.60
30								183.90	182.36	180.74	180.82	182.75
31								183.73	182.36	180.71	180.82	182.87

Missouri River.—Glasgow, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	183.05	183.50	179.29	184.04	183.93	185.77	194.71	187.30	181.81	180.32	179.77	183.20
2	183.15	183.67	179.20	183.90	183.90	186.43	194.40	187.65	181.76	180.37	179.71	183.20
3	183.30	183.77	179.14	183.50	183.40	186.36	194.37	187.40	182.00	180.45	179.70	182.75
4	183.45	183.90	179.31	183.66	183.41	186.59	193.30	187.42	181.92	180.47	179.68	182.32
5	183.34	183.92	179.62	184.25	184.55	187.10	193.15	187.76	181.85	180.42	179.75	182.02
6	183.38	183.83	179.64	184.18	184.80	187.36	192.42	187.50	181.59	180.32	179.75	181.97
7	183.40	184.02	179.97	184.22	184.77	187.36	192.55	186.89	181.71	180.24	179.76	183.35
8	183.34	184.17	180.80	186.37	184.41	186.89	192.54	186.90	181.50	180.20	179.84	184.27
9	183.30	184.26	180.61	188.40	184.81	187.10	192.44	186.47	181.43	180.18	179.97	184.62
10	183.17	185.50	180.39	189.37	185.15	187.36	191.71	185.41	181.57	180.17	180.15	184.57
11	183.00	183.26	180.41	189.91	184.95	187.60	191.07	185.40	181.54	180.32	180.75	184.07
12	182.91	182.70	181.65	190.44	184.40	187.38	190.37	185.37	181.54	180.35	181.25	183.35
13	182.89	182.38	182.42	189.85	184.55	187.66	189.89	184.42	181.80	180.45	183.27	182.45
14	182.90	181.81	182.16	188.83	184.60	187.43	189.41	184.40	182.01	180.32	185.00	181.40
15	182.94	183.01	182.10	187.80	184.54	188.36	189.40	184.48	181.97	180.28	186.35	180.30
16	183.02	184.90	182.40	187.08	184.39	188.40	188.41	184.32	181.74	180.15	186.15	179.40
17	183.07	185.07	182.62	186.55	184.54	189.38	188.38	183.76	181.42	180.25	185.87	178.65
18	183.12	185.92	182.42	186.09	184.44	189.75	188.38	183.90	181.16	180.40	185.50	178.30
19	183.14	186.92	182.19	185.74	184.54	190.40	188.42	183.60	180.99	180.61	184.72	177.70
20	183.15	186.25	181.77	185.27	184.90	191.15	187.82	183.39	180.87	180.77	183.70	177.55
21	183.15	185.80	181.50	185.00	184.77	190.41	188.10	183.37	180.84	180.87	183.25	177.87
22	183.18	185.58	181.34	184.79	184.67	190.45	188.57	182.90	180.77	180.77	182.80	177.95
23	183.17	182.06	181.01	184.63	184.37	189.40	188.35	182.77	180.70	180.52	182.27	178.02
24	183.16	180.38	180.83	184.45	184.43	189.30	188.90	182.71	180.62	180.32	181.92	178.15
25	183.13	179.82	180.89	184.60	184.50	189.88	189.32	182.65	180.56	180.18	181.75	180.65
26	183.12	179.69	181.07	184.35	184.80	190.89	188.34	182.60	180.47	180.07	181.57	180.65
27	183.10	179.65	180.82	184.30	184.70	192.78	187.76	182.54	180.41	180.05	181.47	180.70
28	183.37	179.60	180.57	184.30	184.82	193.90	187.71	182.38	180.35	179.99	181.27	180.97
29	183.66		180.70	184.25	185.15	194.37	187.75	182.61	180.35	179.87	181.60	181.30
30	183.55		182.75	184.00	184.71	194.59	187.54	182.32	180.35	179.80	182.70	181.07
31	183.53		183.77		185.47		187.37	181.84		.....		181.15

Missouri River.—Glasgow, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	181.45	180.50	182.02	183.07	182.47	184.27	188.47	186.90	186.35	182.70	180.92	181.00
2	181.50	180.54	181.90	182.45	182.15	183.90	188.90	186.62	186.97	182.57	180.82	181.27
3	181.60	179.95	181.50	181.77	182.00	183.65	189.85	186.42	185.87	182.60	180.75	181.65
4	180.10	179.20	180.82	181.85	181.95	183.65	190.40	186.34	185.55	183.32	180.75	181.47
5	183.35	178.82	180.05	182.67	182.02	183.72	190.45	186.30	186.25	183.42	180.72	181.60
6	183.90	178.70	179.32	182.85	182.15	184.55	190.35	186.22	186.75	182.85	180.67	181.62
7	184.52	178.50	179.10	182.72	182.17	185.10	190.35	186.14	187.07	182.30	180.65	180.80
8	184.37	178.65	179.42	184.80	181.95	186.17	190.52	186.02	186.70	182.20	180.65	180.07
9	184.20	178.52	179.77	187.85	181.70	186.17	190.92	185.92	185.95	181.97	180.70	179.87
10	183.65	178.62	180.00	187.10	181.60	185.80	191.30	185.77	185.40	181.77	180.90	179.67
11	182.65	178.80	179.92	186.30	181.60	185.57	191.45	185.72	184.97	181.65	181.12	179.72
12	181.92	179.32	179.80	185.65	181.57	185.57	191.47	185.62	184.67	181.57	181.32	180.22
13	181.42	179.85	179.82	185.32	181.52	185.32	191.67	185.56	184.40	181.47	181.40	180.85
14	181.07	180.95	179.87	184.85	181.45	185.12	191.55	185.20	184.17	181.40	181.22	181.22
15	181.00	181.35	180.00	184.12	181.45	185.05	191.25	184.87	184.00	181.60	181.20	181.65
16	180.72	181.22	179.97	183.75	181.42	185.17	191.35	184.65	183.72	182.02	181.15	181.70
17	180.07	180.62	179.62	183.47	181.35	185.47	191.17	184.45	183.52	181.95	181.12	181.75
18	179.72	180.20	179.05	183.22	181.35	186.65	190.85	184.15	183.27	181.72	181.05	181.95
19	179.57	180.10	178.60	183.05	181.50	187.27	190.72	183.97	183.10	181.75	180.87	181.90
20	179.47	180.15	178.20	182.70	181.55	187.20	190.60	183.80	182.90	181.95	180.50	181.92
21	179.45	180.30	178.15	182.52	181.40	187.25	190.47	183.64	182.75	181.95	179.87	180.65
22	179.45	180.35	178.20	182.47	181.20	187.37	190.42	183.55	182.70	181.85	181.85	180.52
23	179.55	180.15	178.50	182.40	181.20	188.35	190.50	183.55	182.70	181.72	182.10	180.40
24	179.57	179.92	178.67	182.27	181.15	188.80	190.50	183.57	182.60	181.60	181.85	180.32
25	179.55	179.92	178.75	182.32	181.07	188.60	189.87	183.70	182.47	181.52	181.67	180.30
26	179.55	180.45	178.82	183.45	181.25	188.30	189.10	183.77	182.85	181.25	181.52	180.40
27	179.40	181.32	180.70	183.70	182.12	188.07	188.45	184.62	182.80	181.10	181.20	180.50
28	179.25	181.60	182.70	183.52	182.75	187.95	187.82	184.55	182.62	181.05	181.27	179.87
29	179.25	181.50	183.97	183.32	183.17	188.15	187.37	184.39	182.60	181.02	181.42	179.07
30	179.50		184.35	182.87	184.17	188.32	187.10	184.80	182.62	180.97	181.17	178.92
31	179.82		183.82		184.47		186.92	.....		180.95		178.72

Missouri River.—Glasgow, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	178.52	180.20	185.05	193.70	199.87	190.64	192.77	186.82	183.61	182.76	184.97	182.29
2	178.42	180.20	185.12	193.95	200.82	191.77	192.67	186.78	183.59	182.80	185.04	182.60
3	179.15	180.20	185.07	193.62	201.07	192.55	192.99	186.74	183.80	182.66	185.01	182.49
4	179.92	180.17	185.25	192.20	200.55	192.70	192.86	186.60	183.67	182.64	184.87	182.51
5	180.40	180.15	185.60	192.40	199.35	192.42	192.31	186.44	183.59	182.80	184.62	182.57
6	180.47	180.80	185.35	193.00	197.05	191.30	191.69	186.29	183.50	183.75	184.57	182.47
7	180.52	182.55	184.90	193.27	193.95	191.52	191.07	186.10	183.40	184.36	184.54	182.21
8	180.55	189.05	184.57	193.50	192.55	191.50	190.45	186.01	183.35	184.57	184.41	182.12
9	180.50	188.47	184.26	193.80	192.40	191.17	189.92	186.01	183.37	184.36	184.32	182.05
10	180.45	187.47	184.27	194.10	192.50	191.47	189.57	185.92	183.49	183.92	184.26	182.12
11	180.45	186.77	185.01	194.65	192.87	191.78	189.40	185.70	183.55	183.60	184.55	182.20
12	180.40	186.12	186.75	195.07	192.40	192.45	189.39	185.47	183.52	183.55	185.79	182.12
13	180.20	185.35	188.75	195.57	192.25	192.02	189.87	185.32	183.80	183.52	187.36	182.17
14	180.15	184.05	188.86	196.02	192.35	191.73	190.34	185.26	184.39	183.75	187.35	182.45
15	180.10	183.25	189.40	196.17	191.70	191.69	190.49	185.12	184.07	184.35	187.15	182.56
16	180.00	182.27	190.72	195.35	191.64	191.77	189.86	185.07	183.45	185.01	187.12	182.42
17	179.80	180.97	192.02	193.65	191.54	192.36	190.14	185.04	183.30	185.65	186.97	182.27
18	179.85	180.80	191.82	192.95	191.85	193.22	190.04	184.87	183.19	186.27	186.59	182.15
19	179.95	181.17	191.75	192.67	191.17	193.22	189.75	184.75	183.19	187.05	185.72	182.12
20	179.92	181.25	190.87	192.77	190.87	192.70	189.31	184.75	183.20	187.02	184.97	182.17
21	179.85	181.05	190.05	193.75	190.57	192.40	188.90	184.67	183.20	187.17	184.69	182.50
22	179.82	180.65	189.65	194.60	190.17	192.22	188.60	184.45	183.19	187.60	184.42	183.41
23	179.90	180.22	189.55	195.30	192.00	192.39	188.50	184.30	183.11	187.93	183.91	183.74
24	180.00	180.17	189.05	195.85	192.10	192.12	188.42	184.21	183.02	188.04	183.33	183.70
25	180.00	180.10	188.02	196.20	191.67	191.69	188.22	184.09	182.83	187.77	182.96	183.55
26	180.07	180.40	189.07	196.45	191.12	191.81	187.87	183.99	182.64	186.77	182.58	183.37
27	180.10	182.88	189.25	196.72	190.69	191.65	187.57	183.81	182.50	185.79	182.15	183.19
28	180.15	184.67	189.62	197.09	190.27	191.32	187.41	183.70	182.39	185.42	181.79	183.07
29	180.15		190.55	197.75	190.05	191.59	187.34	183.60	182.44	185.27	181.76	182.99
30	180.18		193.55	198.72	189.85	192.54	187.27	183.67	182.54	184.99	181.97	182.82
31	180.18		194.35		189.90		187.04	183.69		184.88		182.62

Missouri River.—Glasgow, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	182.49	180.51	181.67	183.44	188.89	191.25	198.07	187.65	183.43	181.47	182.35	181.12
2	182.17	180.30	182.40	183.17	186.87	190.72	198.42	187.97	183.37	181.46	182.15	180.85
3	181.94	180.25	182.75	182.92	186.70	189.92	198.20	188.40	183.34	181.39	182.07	180.79
4	181.47	180.37	183.31	182.85	187.25	189.62	198.07	188.30	183.25	181.32	181.92	180.76
5	180.91	180.57	183.70	182.96	187.27	189.62	197.52	187.72	183.16	181.27	181.95	180.67
6	180.74	180.73	183.79	183.25	183.81	189.42	197.00	187.12	183.07	181.27	181.95	180.57
7	180.70	180.84	183.80	183.43	186.40	188.92	196.27	186.80	183.03	181.34	181.94	180.47
8	180.47	180.89	184.00	184.26	186.82	188.12	195.17	186.45	182.92	181.41	181.84	181.02
9	180.35	181.13	184.47	184.94	187.21	187.55	194.02	186.25	182.80	181.44	181.77	182.84
10	180.39	181.50	184.65	185.67	187.17	187.05	193.10	186.17	182.74	181.51	182.17	182.53
11	180.57	181.47	184.37	186.47	187.10	186.81	192.52	186.10	182.64	181.44	182.27	182.07
12	180.77	181.39	183.87	187.55	187.07	187.07	191.97	185.87	182.56	181.47	182.04	182.15
13	180.94	181.15	183.32	189.01	186.92	187.17	191.50	185.70	182.45	181.57	181.92	182.21
14	181.05	181.25	183.17	190.65	186.72	187.27	191.24	185.57	182.34	181.69	181.87	182.01
15	181.27	181.62	183.52	190.44	186.50	188.82	191.15	185.25	182.29	181.89	181.85	181.74
16	181.17	182.34	184.14	189.54	186.52	189.87	191.42	185.05	182.20	182.47	181.95	181.01
17	181.11	182.47	184.40	188.77	187.34	190.15	191.50	184.95	182.09	182.90	182.14	180.57
18	180.81	182.37	184.22	188.17	187.89	190.20	191.90	184.77	182.00	182.89	182.23	180.84
19	180.35	182.24	183.79	187.73	187.50	190.15	192.35	184.60	182.32	182.65	182.21	181.39
20	179.87	182.37	183.79	187.30	187.15	191.45	191.97	184.37	182.37	182.56	182.14	182.47
21	179.85	182.72	184.17	187.53	186.77	192.85	191.30	184.29	182.24	182.51	182.04	181.79
22	180.14	182.67	184.07	187.75	186.63	193.65	190.50	184.25	181.87	182.43	181.89	180.87
23	180.07	182.05	184.07	188.10	187.80	193.70	189.82	184.13	181.70	182.31	181.77	180.20
24	180.11	181.36	183.65	188.42	188.25	193.35	189.27	184.14	181.61	182.15	181.67	179.94
25	180.30	180.91	183.31	188.45	188.00	192.99	188.82	184.00	181.56	182.15	181.61	179.84
26	181.04	180.77	182.95	188.46	187.66	193.27	188.42	183.85	181.49	182.12	181.70	179.78
27	181.08	180.72	182.95	188.57	188.35	193.92	188.10	183.73	181.42	182.17	181.65	179.74
28	181.16	180.97	183.14	188.84	189.26	194.40	187.80	183.62	181.39	182.53	181.57	179.65
29	180.84		183.41	188.97	190.35	194.92	187.60	183.52	181.44	182.80	181.39	179.57
30	180.87		183.47	188.65	190.62	195.99	187.30	183.49	181.45	182.70	181.22	179.50
31	180.69		183.61		191.17		187.25	183.44		182.51		.....

Missouri River.—Glasgow, Mo., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	179.50	181.87	187.79	186.05	186.06	191.98	199.65	189.04	184.91	182.31	184.24	181.97
2	179.54	181.84	186.91	185.78	185.94	191.67	198.53	188.38	184.75	182.25	184.01	181.71
3	178.00	181.85	186.07	185.59	185.82	191.31	197.38	187.77	184.61	182.67	183.77	181.52
4	180.79	181.74	185.85	185.69	185.74	191.30	195.98	187.42	184.47	182.97	183.48	181.39
5	180.52	181.70	186.01	185.89	185.68	192.57	194.84	187.37	184.22	182.61	183.45	181.14
6	180.47	181.63	186.37	185.88	185.70	193.84	194.06	187.41	184.12	182.94	183.60	180.94
7	180.92	181.47	187.21	186.02	185.55	194.18	193.58	187.31	183.91	183.04	184.99	180.95
8	181.14	181.36	187.01	186.21	185.35	193.69	193.51	186.97	183.72	183.10	185.98	180.81
9	181.07	181.27	186.37	186.52	185.30	193.97	193.46	186.58	183.57	183.26	186.35	180.77
10	181.15	181.21	185.72	186.64	185.25	194.16	193.45	186.37	183.47	183.25	186.15	180.77
11	181.60	181.17	185.18	186.30	185.17	194.35	193.42	186.31	183.32	183.05	185.51	180.85
12	181.62	181.12	185.32	186.07	185.71	194.20	193.71	186.43	183.22	182.79	184.77	180.94
13	181.76	181.10	186.47	185.91	186.42	195.22	194.53	186.40	183.09	182.64	184.32	181.05
14	181.87	181.77	186.21	185.82	187.51	195.91	194.92	186.39	182.97	182.46	184.00	181.08
15	182.22	182.95	185.51	185.66	188.57	195.77	194.85	186.41	182.84	182.71	183.78	181.19
16	182.15	188.75	185.41	185.75	189.17	196.05	194.81	187.05	182.77	182.94	183.52	181.23
17	182.12	190.27	185.81	186.39	189.72	197.58	194.25	186.82	182.64	183.03	183.30	181.31
18	182.07	187.72	186.16	186.66	191.50	199.18	193.35	186.58	182.59	183.10	183.06	181.24
19	181.87	187.37	186.02	188.20	192.04	200.18	192.55	186.54	182.55	183.12	182.70	181.13
20	181.70	187.87	185.92	188.32	192.51	200.80	191.91	186.66	182.51	183.34	182.49	180.86
21	181.63	187.92	186.15	189.92	192.50	201.53	191.15	187.47	182.45	183.59	182.25	180.08
22	181.63	187.61	186.32	189.90	191.77	202.23	190.52	187.90	182.38	183.93	182.18	179.18
23	181.57	186.80	185.81	188.65	190.98	202.46	190.13	187.37	182.34	183.88	182.10	179.02
24	181.54	186.20	185.01	188.05	190.48	202.30	190.11	187.32	182.31	183.57	182.01	179.04
25	181.54	186.92	184.70	187.37	190.26	201.98	189.92	186.97	182.27	183.35	182.15	179.09
26	181.56	187.69	184.45	186.96	191.05	201.51	189.17	186.47	182.24	183.59	182.37	178.99
27	181.67	187.84	184.46	186.73	193.63	201.41	188.86	186.01	182.24	184.19	182.40	178.83
28	181.69	187.89	186.02	186.40	194.10	201.30	188.40	185.64	182.31	184.78	182.39	178.55
29	181.79		187.05	186.37	193.50	200.90	188.20	185.54	182.39	184.69	182.29	178.41
30	181.85		186.70	186.35	192.73	200.36	188.29	185.33	182.42	184.50	182.15	178.57
31	181.88		186.31		192.24		188.97	185.05		184.41		178.32

Missouri River.—Glasgow, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	178.11	184.54	182.31	190.29	187.29	188.75	192.00	190.04	187.79	186.62	183.71	181.60
2	178.70	184.39	182.12	190.13	188.07	189.07	191.66	190.22	187.45	185.92	183.58	181.48
3	178.45	183.66	181.73	190.78	189.50	189.24	191.55	189.99	186.92	185.45	183.58	181.51
4	178.46	183.03	181.49	191.09	190.34	189.54	191.86	189.42	186.40	185.28	183.55	181.61
5	178.61	182.43	181.41	191.16	190.56	189.89	192.31	188.97	185.96	185.48	183.44	181.74
6	179.30	182.29	181.57	192.22	190.82	190.16	192.65	188.61	185.71	185.29	183.32	182.01
7	179.74	181.91	181.75	193.44	190.64	190.10	192.64	188.11	185.77	184.98	183.23	182.56
8	179.84	181.44	181.64	193.92	190.32	190.11	192.50	187.66	185.49	185.27	183.13	182.97
9	180.21	181.00	181.75	194.25	190.12	190.88	192.04	187.30	185.28	185.87	183.10	183.40
10	180.56	180.79	181.91	194.39	190.43	191.74	191.61	187.02	185.02	185.93	183.06	183.46
11	180.69	180.61	182.19	193.91	190.17	192.13	191.35	186.74	185.62	186.29	183.03	183.33
12	180.99	180.56	182.19	192.93	189.41	192.13	191.07	186.51	185.57	186.46	182.96	183.09
13	181.09	180.74	182.71	191.83	188.67	191.86	191.36	186.29	184.87	186.24	182.94	182.84
14	181.21	180.52	183.36	191.19	188.37	191.75	191.71	186.11	184.51	185.95	182.93	182.68
15	181.30	180.58	183.50	190.65	188.09	191.55	192.73	186.00	184.43	185.84	182.89	182.27
16	181.40	180.64	183.59	190.18	187.94	191.55	192.76	185.97	184.40	185.85	182.85	181.76
17	181.47	180.56	183.51	189.68	187.69	191.79	191.99	186.05	184.26	185.68	182.77	181.02
18	181.52	180.57	183.95	189.33	187.58	192.31	191.32	186.13	184.15	185.34	182.71	180.11
19	181.64	181.04	185.95	189.03	187.89	193.02	190.63	186.11	184.33	184.88	182.70	181.05
20	181.81	181.83	186.87	189.19	187.42	193.51	189.89	185.94	184.45	184.58	182.66	179.24
21	181.89	182.47	186.91	190.00	187.17	193.40	189.62	185.91	184.40	184.73	182.63	180.75
22	181.94	182.72	187.51	190.44	187.24	193.37	189.57	185.94	184.36	185.85	182.68	181.01
23	182.05	182.67	187.81	190.64	187.06	193.59	189.47	185.88	184.47	185.82	183.04	180.70
24	182.09	182.35	187.71	190.72	186.84	193.97	189.32	185.71	185.24	185.09	183.59	180.90
25	182.10	182.02	189.29	190.09	187.12	194.10	189.71	185.99	186.53	184.52	183.70	180.82
26	182.05	182.54	192.48	189.05	187.43	194.10	189.87	187.10	186.22	184.17	183.45	180.91
27	181.94	182.43	193.25	188.45	187.93	193.80	190.02	187.15	185.27	184.24	183.01	181.30
28	181.87	182.15	191.89	187.85	187.95	193.42	190.17	186.71	186.06	184.33	182.46	181.82
29	181.77	182.14	190.83	187.45	187.92	192.99	190.12	186.70	187.26	184.18	182.18	182.45
30	182.00		190.38	187.24	187.65	192.57	189.99	186.77	187.38	183.97	181.81	183.88
31	182.87		190.19		187.91		190.07	187.37		183.86		185.28

Missouri River.—Glasgow, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	185.67	183.72	184.60	186.98	191.04	188.87	192.66	189.75	186.68	183.53	183.33	182.72
2	185.66	183.54	185.60	187.07	190.73	189.20	192.25	189.81	187.00	183.45	183.35	182.79
3	185.55	183.48	187.34	188.21	190.67	189.41	192.06	189.62	186.97	183.28	183.44	182.63
4	185.37	183.57	189.40	188.22	190.18	189.72	192.12	189.02	186.72	183.18	183.53	182.68
5	184.86	184.13	190.25	187.57	189.36	189.56	192.10	188.70	187.06	183.05	183.55	182.51
6	184.82	185.73	188.70	187.11	188.69	189.82	192.06	188.75	186.90	182.91	184.19	182.61
7	185.45	187.69	188.11	186.92	188.62	190.74	192.18	188.71	186.16	182.85	184.79	182.51
8	185.86	189.29	187.92	186.86	188.70	191.07	192.37	188.59	186.38	182.73	184.34	182.39
9	186.03	190.27	188.24	187.09	188.32	190.42	192.22	188.43	187.61	182.67	183.71	182.30
10	186.21	189.37	189.22	187.19	187.77	190.43	192.08	188.76	187.53	182.60	183.18	181.71
11	186.57	188.23	189.72	187.11	187.35	190.56	191.99	188.82	187.00	182.52	183.03	181.32
12	187.72	186.95	189.64	186.90	187.05	192.11	191.81	190.39	186.24	182.50	182.93	180.97
13	187.85	186.33	189.90	186.62	186.76	192.65	191.50	190.78	186.22	182.55	182.99	179.75
14	187.95	186.57	191.47	186.92	186.58	193.25	191.31	189.56	186.78	182.63	183.10	179.03
15	187.57	186.59	190.17	187.35	186.41	193.59	191.18	188.67	186.44	182.68	183.20	178.88
16	186.77	186.39	189.67	187.84	186.25	193.56	191.09	188.00	186.29	182.68	183.18	182.43
17	186.29	186.07	189.78	188.40	186.30	194.02	191.09	187.60	186.40	182.66	183.15	183.24
18	186.05	185.65	189.96	188.22	186.54	194.45	191.00	187.16	186.18	182.67	182.99	183.27
19	185.68	185.41	189.45	187.76	186.94	194.88	190.53	186.76	185.98	182.89	182.83	183.18
20	185.40	185.27	189.23	187.20	187.45	195.81	190.18	186.49	185.89	183.65	182.84	183.28
21	185.14	185.25	188.80	186.69	188.06	195.98	189.75	186.27	185.74	183.98	182.85	183.59
22	184.92	185.22	188.27	186.72	188.16	196.07	189.49	185.99	185.25	183.60	182.89	183.37
23	184.90	185.08	187.72	187.72	188.02	195.79	189.30	185.82	184.81	183.13	182.92	180.30
24	184.84	184.92	187.23	187.96	187.67	195.65	189.25	185.63	184.50	182.93	182.91	181.04
25	184.72	184.65	186.80	188.27	187.76	195.37	189.78	185.44	184.36	182.85	182.84	181.86
26	184.50	184.40	186.73	189.11	188.19	195.13	190.04	185.42	184.24	182.82	182.77	181.60
27	184.34	184.19	187.61	189.86	188.23	195.15	190.31	185.51	184.12	182.82	182.74	181.45
28	184.17	184.23	187.78	189.93	188.44	195.01	190.22	185.61	183.95	182.99	182.75	181.50
29	184.09		187.28	189.65	188.60	194.08	190.03	185.88	183.77	183.40	182.75	181.72
30	184.04		187.17	189.90	188.33	193.39	190.06	186.02	183.62	183.77	182.73	182.86
31	183.88		187.06		188.58		189.07	186.24		183.58		183.15

Missouri River.—De Witt, Mo., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	207.0	210.8	211.7	211.2	216.7	222.8	214.7	210.2	207.4	209.3	206.4
2	.....	207.0	209.8	211.5	211.0	216.3	222.1	214.0	209.9	207.4	209.0	206.2
3	.....	206.9	209.3	211.6	210.9	216.1	221.3	213.8	209.7	208.3	208.8	206.1
4	.....	206.8	209.1	211.5	210.9	216.6	220.2	213.1	209.5	207.8	208.6	205.8
5	.....	206.7	209.7	211.7	211.0	217.7	219.5	213.1	209.3	207.7	208.5	205.7
6	203.4	206.6	210.4	211.8	210.9	218.3	219.1	213.2	209.1	208.6	208.9	205.6
7	204.6	206.6	211.5	212.0	210.6	218.3	219.0	212.8	208.8	208.0	209.6	205.6
8	206.6	206.4	211.0	212.1	210.5	217.9	219.0	212.5	208.6	208.0	209.7	205.5
9	206.7	206.3	210.3	212.1	210.6	218.2	219.0	211.9	208.5	208.2	209.7	205.4
10	207.2	206.3	209.8	212.0	210.2	218.2	219.0	211.8	208.4	208.2	209.3	205.5
11	206.9	206.2	209.5	211.7	210.3	218.2	218.9	211.8	208.2	208.0	209.0	205.5
12	207.1	206.1	210.4	211.5	210.6	218.1	219.5	211.9	208.1	207.7	208.7	205.7
13	207.1	206.1	211.5	211.4	211.4	219.4	219.9	211.8	208.0	207.6	208.5	205.8
14	207.5	206.3	210.9	211.0	213.2	219.1	219.7	211.8	207.8	207.6	208.2	205.9
15	207.3	208.2	210.4	210.9	213.8	219.2	219.6	212.0	207.7	207.8	208.1	206.0
16	207.3	213.3	210.8	211.7	214.2	219.4	219.2	212.6	207.7	207.5	208.0	206.1
17	207.3	212.7	211.4	212.3	215.0	220.9	218.7	212.0	207.6	207.3	207.8	206.2
18	207.0	210.2	211.7	213.0	216.6	221.5	218.0	211.9	207.6	207.3	207.5	206.2
19	206.9	210.1	211.6	214.7	216.4	222.2	217.7	211.9	207.5	207.8	207.2	205.9
20	206.8	210.8	211.7	216.0	216.9	222.6	216.9	212.3	207.5	207.8	206.9	205.8
21	206.6	210.6	211.9	216.4	216.6	223.5	216.3	213.6	207.5	208.0	206.6	205.0
22	206.7	210.1	211.9	215.7	216.0	223.6	215.9	213.4	207.4	208.8	206.6	204.0
23	206.6	209.2	211.4	214.4	215.6	223.6	215.4	213.0	207.3	208.8	206.4	203.6
24	206.7	208.8	210.4	213.4	215.3	223.6	215.2	212.8	207.3	208.6	206.5	203.9
25	206.6	210.8	210.0	212.8	215.3	223.6	215.1	212.0	207.3	208.5	206.7	203.9
26	206.7	211.2	209.9	212.3	217.2	223.6	214.8	211.6	207.3	208.9	207.0	203.8
27	206.7	211.4	210.5	212.0	218.5	223.8	214.4	211.3	207.4	209.5	206.9	203.7
28	206.8	211.2	213.0	211.8	218.6	223.8	214.1	211.0	207.5	209.8	207.9	203.5
29	206.9		212.9	211.9	218.0	223.5	214.0	210.8	207.5	209.6	206.8	203.7
30	206.9		212.5	211.6	217.4	223.2	214.1	210.6	207.5	209.5	206.6	203.7
31	206.9		212.1		217.0		215.2	210.3		209.4		203.4

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	203.5	209.0	205.9	215.1	212.2	214.5	217.1	214.7	211.3	211.9	208.1	205.9
2	202.8	208.6	205.8	215.0	213.2	214.7	216.9	215.0	211.1	211.0	208.1	205.8
3	203.4	206.8	206.0	215.5	214.3	214.9	216.9	214.4	210.8	210.0	208.2	205.9
4	203.6	206.5	205.9	215.9	214.9	215.3	217.5	213.7	210.4	210.1	208.2	206.1
5	203.8	206.0	206.1	216.4	214.9	215.7	217.9	213.3	210.1	210.3	208.1	206.3
6	203.9	205.9	206.4	217.8	215.3	215.9	218.2	212.8	210.0	210.0	208.0	206.9
7	204.2	205.9	206.7	218.8	215.3	215.7	218.1	212.3	209.8	209.8	207.9	207.4
8	204.6	205.8	206.7	219.1	215.0	215.7	217.8	211.8	209.7	210.4	207.8	207.5
9	204.9	205.7	206.8	219.2	214.9	216.9	217.3	211.5	209.4	210.8	207.7	207.5
10	205.2	205.5	207.0	219.4	215.2	217.3	216.9	211.2	209.6	210.8	207.7	207.4
11	205.6	205.5	207.3	218.7	214.6	217.5	216.7	210.9	210.7	210.8	207.7	207.4
12	205.9	205.4	207.5	217.7	213.8	217.2	216.3	210.7	210.0	210.9	207.6	207.3
13	206.2	205.3	208.5	216.8	213.2	217.1	216.5	210.4	209.2	210.6	207.6	207.1
14	206.2	205.2	208.7	216.2	213.0	217.1	217.1	210.3	208.9	210.4	207.6	206.9
15	206.2	205.2	208.4	215.6	212.6	216.9	216.8	210.2	208.8	210.4	207.6	206.3
16	206.2	205.1	208.3	215.1	212.7	216.9	216.4	210.2	208.7	210.4	207.5	205.7
17	206.3	205.2	209.2	214.8	212.3	217.3	215.7	210.2	208.6	210.2	207.5	204.7
18	206.4	205.3	209.7	214.4	212.8	217.9	215.3	210.1	208.6	209.8	207.6	203.7
19	206.6	205.6	211.4	214.2	212.5	218.5	214.9	210.0	208.9	209.4	207.6	201.3
20	206.7	206.5	211.1	214.4	212.0	218.6	214.7	210.1	208.9	209.1	207.6	200.6
21	206.7	206.4	211.2	215.6	211.9	218.5	214.4	210.1	208.8	209.5	207.6	200.4
22	206.9	206.5	212.2	215.7	211.7	218.5	214.4	210.1	208.9	210.2	207.6	201.0
23	206.9	206.6	212.5	215.9	211.4	218.9	214.2	210.1	209.1	209.9	208.0	201.8
24	206.9	206.3	212.5	215.7	211.5	219.3	214.1	210.0	210.1	209.2	208.2	203.8
25	206.9	206.9	214.5	214.9	212.1	219.3	214.4	210.5	212.0	208.8	208.2	205.1
26	206.8	207.5	217.7	214.0	212.6	219.2	214.6	211.7	210.4	208.5	207.8	205.4
27	206.7	206.9	217.4	213.3	213.1	218.9	214.8	211.3	210.0	208.6	207.2	205.5
28	206.6	206.7	216.0	212.8	213.1	218.5	214.9	211.0	211.0	208.5	206.8	205.9
29	206.5	206.3	215.5	212.4	213.0	218.1	214.5	211.1	212.0	208.3	206.5	206.2
30	206.7		215.3	212.1	212.9	217.6	214.5	211.0	211.7	208.3	206.1	206.7
31	208.1		215.1	212.1	213.6		214.7	211.2		208.2		207.0

Missouri River.—Dewitt, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	206.90	207.70	209.42	211.32	215.00	213.90	217.20	214.82	210.60	208.62	208.45	208.20
2	206.80	207.70	210.37	211.55	214.35	214.30	216.92	214.97	210.85	208.50	208.52	208.05
3	206.70	207.72	211.85	213.02	214.27	214.62	217.37	214.65	210.67	208.37	208.62	208.05
4	206.60	207.75	213.22	212.27	213.82	215.07	216.98	214.15	210.62	208.22	208.70	208.00
5	206.47	208.62	215.37	211.72	212.97	214.42	217.00	213.97	212.00	208.12	208.78	208.02
6	206.72	210.67	215.95	211.47	212.47	214.50	217.05	213.80	211.27	208.03	209.87	208.05
7	207.32	211.75	213.67	211.32	212.35	215.50	217.20	213.62	210.57	207.95	209.70	207.80
8	207.37	213.45	213.15	211.50	212.25	215.77	217.22	213.40	211.05	207.90	209.10	207.32
9	207.57	213.10	212.62	211.60	212.05	215.45	217.12	213.65	212.20	207.85	208.67	206.85
10	208.00	211.60	213.65	211.60	211.80	215.25	217.00	214.02	212.27	207.80	208.45	205.32
11	208.97	210.40	214.92	211.55	211.40	215.57	216.90	214.00	211.50	207.72	208.37	204.70
12	209.52	209.57	213.62	211.27	211.25	218.15	216.60	216.50	210.87	207.72	208.35	204.00
13	209.70	210.07	214.12	211.20	210.95	218.15	216.45	215.85	210.95	207.82	208.50	203.35
14	209.70	210.65	215.42	211.75	210.90	219.12	216.15	214.45	211.10	207.92	208.57	203.30
15	209.55	210.68	214.02	211.90	210.70	218.53	216.10	213.60	210.95	208.00	208.70	203.30
16	209.22	210.65	214.22	212.72	210.50	218.55	215.92	212.98	211.05	208.00	208.60	203.30
17	209.12	210.32	214.57	213.17	210.57	219.10	215.85	212.47	211.05	208.05	208.52	203.37
18	209.05	210.15	213.90	212.70	210.80	219.52	215.57	212.17	210.92	208.10	208.42	203.47
19	208.80	210.15	213.50	212.02	211.17	219.72	215.30	211.80	210.90	208.40	208.30	203.70
20	208.60	210.22	213.35	211.30	211.70	220.12	214.95	211.47	210.92	209.27	208.30	204.10
21	208.40	210.25	212.67	210.52	212.50	220.00	214.57	211.05	210.67	209.07	208.32	205.05
22	208.32	210.17	212.20	210.95	212.52	219.97	214.30	210.77	210.20	208.52	208.42	205.27
23	208.08	210.00	211.65	211.22	212.30	219.67	214.12	210.37	209.80	208.15	208.50	205.60
24	208.23	209.53	211.25	211.15	211.95	219.42	213.90	209.97	209.55	208.00	208.50	206.10
25	208.25	209.42	210.95	211.25	212.55	218.97	214.35	209.90	209.40	208.00	208.40	207.25
26	208.17	209.27	211.35	213.10	212.90	218.52	215.10	209.85	209.32	208.02	208.37	207.20
27	208.02	209.25	212.40	213.42	212.92	218.50	215.55	209.75	209.12	208.12	208.30	207.15
28	207.97	209.17	212.05	213.20	213.22	218.32	215.60	209.77	208.97	208.25	208.30	207.15
29	207.93		211.65	213.00	213.52	218.00	215.25	209.95	208.77	208.50	208.30	208.50
30	207.87		211.55	213.65	213.20	217.60	215.20	209.95	208.67	208.45	208.25	210.17
31	207.80		211.45		213.62		214.90	210.17		208.40		210.05

Missouri River.—Waverly, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									239.5	237.4	235.6	235.6
2									239.3	237.3	235.6	235.4
3									239.2	237.3	235.7	235.3
4									239.2	237.2	235.7	235.2
5									239.1	237.2	235.7	235.1
6									238.9	237.2	235.6	235.1
7									238.8	237.1	235.7	235.2
8									238.8	236.9	235.7	235.2
9									238.9	236.8	235.7	235.1
10									239.0	236.7	235.6	235.0
11									239.0	236.8	235.6	235.0
12									239.2	236.8	235.6	235.0
13								243.9	239.5	236.8	235.6	235.0
14								243.8	239.1	236.7	235.6	234.8
15								243.7	239.0	236.5	235.7	233.6
16								243.5	238.8	236.4	235.7	232.9
17								243.0	238.7	236.4	235.7	232.8
18								242.8	238.6	236.5	235.8	232.6
19								242.4	238.4	236.4	235.9	232.3
20								242.1	238.3	236.3	236.0	232.1
21								241.8	238.2	236.2	235.9	232.0
22								241.5	238.0	236.1	235.9	233.9
23								241.3	237.9	236.0	235.8	235.5
24								241.1	237.8	236.0	235.7	235.2
25								241.1	237.8	236.0	235.6	234.6
26								240.9	237.7	226.0	235.6	234.2
27								240.5	237.7	235.9	235.6	234.9
28								240.3	237.9	235.8	235.5	235.1
29								239.9	237.9	235.7	235.5	235.0
30								239.8	237.7	235.6	235.5	235.2
31								239.6	237.7	235.6	235.5	235.2

Missouri River.—Waverly, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	235.4	236.7	233.5	239.7	239.3	242.8	247.7	243.4	.....	.....	.....	.....
2	235.6	236.8	233.3	239.4	239.1	242.8	247.5	243.2	.....	.....	.....	.....
3	235.4	236.8	233.6	239.1	239.2	242.6	247.2	243.6	.....	.....	.....	.....
4	235.3	236.7	234.0	239.9	239.8	242.8	246.9	243.8	.....	.....	.....	.....
5	235.4	236.7	234.4	240.3	240.2	243.1	247.1	243.5	.....	.....	.....	.....
6	235.4	237.0	234.8	239.8	240.2	243.3	246.5	243.0	.....	.....	.....	.....
7	235.2	236.7	235.9	241.4	240.4	243.2	246.4	242.8	.....	.....	.....	.....
8	235.1	236.6	235.7	243.5	240.6	243.0	246.4	242.4	.....	.....	.....	.....
9	234.8	235.7	235.1	244.7	240.5	243.2	246.5	241.7	.....	.....	.....	.....
10	234.7	235.0	235.2	245.2	240.2	243.6	246.1	241.2	.....	.....	.....	.....
11	234.6	234.8	236.3	245.4	240.3	243.6	245.4	240.9	.....	.....	.....	.....
12	234.6	235.1	237.8	245.3	240.2	243.5	245.2	240.7	.....	.....	.....	.....
13	234.6	234.5	237.5	244.3	240.3	243.3	245.1	240.4	.....	.....	.....	.....
14	234.6	233.6	237.3	243.2	240.3	243.2	245.0	240.2	.....	.....	.....	.....
15	234.7	233.3	237.6	242.4	240.4	243.3	244.5	239.8	.....	.....	.....	.....
16	234.7	233.5	237.9	241.8	240.3	244.1	244.2	239.6	.....	.....	.....	.....
17	234.8	233.7	237.8	241.4	240.2	244.5	244.1	239.4	.....	.....	.....	.....
18	234.9	234.0	237.5	241.1	240.2	245.1	244.0	239.2	.....	.....	.....	.....
19	234.8	233.9	237.1	240.7	240.6	245.6	243.7	239.1	.....	.....	.....	.....
20	234.8	233.8	236.7	240.4	240.7	245.8	243.6	238.9	.....	.....	.....	.....
21	234.9	233.8	236.4	240.0	240.5	245.6	243.7	238.7	.....	.....	.....	.....
22	235.0	233.8	235.8	239.9	240.4	245.1	243.7	238.5	.....	.....	.....	.....
23	235.0	233.9	235.6	239.8	240.3	244.5	243.8	238.4	.....	.....	.....	.....
24	235.0	233.9	235.8	239.7	240.4	244.4	244.2	238.3	.....	.....	.....	.....
25	235.0	234.0	236.0	239.8	240.7	245.6	243.6	238.1	.....	.....	.....	.....
26	235.3	233.9	235.8	239.7	240.9	245.9	243.3	238.0	.....	.....	.....	.....
27	235.4	233.7	235.3	239.7	241.3	246.9	243.4	237.9	.....	.....	.....	.....
28	235.7	233.6	235.2	239.6	241.3	247.3	243.2	237.8	.....	.....	.....	.....
29	235.9		237.6	239.4	241.0	247.3	243.0	237.7	.....	.....	.....	.....
30	236.1		239.4	239.3	241.2	247.7	243.0	237.6	.....	.....	.....	.....
31	236.4		239.8		242.1		243.1	237.5	.....	.....	.....	.....

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	233.2	236.9	238.6	240.8	239.8	245.3	251.2	243.8	239.9	237.1	238.5	235.9
2	233.0	236.8	237.9	240.7	239.6	244.9	250.8	243.3	239.7	237.5	238.3	235.7
3	232.3	236.8	237.6	240.5	239.6	244.8	250.1	242.9	239.6	237.9	238.2	235.5
4	232.4	236.8	237.8	240.6	239.6	245.5	249.2	242.7	239.4	237.4	238.1	235.2
5	234.9	236.6	238.4	240.7	239.7	246.7	248.6	242.8	239.3	237.6	238.1	235.0
6	235.1	236.5	239.4	240.9	239.5	247.4	248.2	242.7	239.1	237.7	238.7	234.9
7	236.2	236.4	240.0	241.0	239.3	247.0	248.2	242.4	239.0	237.6	238.8	234.9
8	235.9	236.3	239.5	241.1	239.1	246.5	248.4	241.9	238.7	237.7	238.7	234.9
9	236.2	236.2	238.8	240.9	239.1	246.8	248.3	241.6	238.5	237.8	238.6	234.9
10	236.4	236.1	238.6	240.8	239.0	247.0	248.3	241.5	238.4	237.8	238.3	234.9
11	236.5	236.0	238.4	240.6	239.2	246.8	248.5	241.6	238.3	237.6	238.3	235.0
12	236.4	236.0	239.8	240.4	239.5	247.0	249.0	241.6	238.2	237.3	238.0	235.2
13	237.0	235.9	240.3	240.2	240.4	248.6	249.5	241.5	238.1	237.2	237.9	235.3
14	236.9	236.8	239.8	239.9	241.3	248.0	249.2	241.5	237.9	237.4	237.7	235.4
15	236.8	240.1	239.5	240.1	242.2	248.1	249.0	242.2	237.9	237.3	237.6	235.5
16	236.8	243.2	240.0	240.9	242.5	248.4	248.5	242.1	237.8	237.0	237.5	235.6
17	236.7	240.4	240.5	241.2	243.7	250.5	247.8	241.7	237.7	236.8	237.3	235.6
18	236.7	237.7	240.8	242.4	244.9	250.6	247.2	241.5	237.6	237.1	237.0	235.5
19	236.6	238.0	240.7	243.2	245.1	250.9	246.8	241.6	237.5	237.4	236.8	235.2
20	236.5	238.6	240.7	244.3	245.6	251.2	246.0	242.4	237.5	237.3	236.4	235.5
21	236.4	238.3	241.0	244.8	245.3	251.6	245.6	243.1	237.4	237.8	236.3	235.9
22	236.3	237.5	240.8	244.0	244.7	251.4	245.2	242.7	237.3	238.2	236.2	235.5
23	236.3	237.0	240.1	243.0	244.3	251.5	244.8	242.3	237.2	238.1	233.1	235.4
24	236.3	237.3	239.4	242.0	244.0	251.5	245.2	241.8	237.2	237.9	236.3	235.0
25	236.4	239.0	239.2	241.3	244.1	251.8	244.4	241.4	237.2	237.9	236.6	234.4
26	236.5	239.1	239.2	240.9	246.3	252.0	244.1	241.1	237.1	238.3	236.7	233.8
27	236.6	239.2	240.4	240.6	247.4	252.1	243.8	240.7	237.2	238.7	236.7	234.3
28	236.7	239.1	242.1	240.5	247.1	252.0	243.6	240.6	237.4	238.8	236.5	235.9
29	236.8		241.9	240.5	246.5	251.7	243.4	240.4	237.4	238.6	236.3	235.9
30	236.8		241.6	240.1	245.9	251.4	243.7	240.1	237.3	238.6	236.1	235.3
31	236.9		241.2		245.6		244.5	240.0		238.6		236.0

Missouri River.—Waverly, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	237.6	239.6	235.0	244.4	242.1	244.4	246.8	244.9	240.9	240.2	237.7	235.5
2	236.3	239.2	235.0	244.6	243.0	244.7	246.6	245.0	240.7	239.7	237.6	235.5
3	235.9	238.8	235.2	245.0	243.7	244.9	246.7	244.4	240.5	239.5	237.7	235.7
4	236.6	238.4	235.1	245.4	244.0	245.3	247.1	243.9	240.3	239.7	237.7	235.8
5	236.5	238.3	235.5	245.9	244.1	245.7	247.6	243.5	240.0	239.7	237.6	236.0
6	236.5	238.2	235.9	247.2	244.5	245.7	247.7	243.0	239.9	239.4	237.4	236.3
7	236.8	237.9	236.1	248.1	244.7	245.6	247.5	242.4	239.8	239.4	237.3	236.6
8	237.2	237.7	236.1	248.2	244.4	245.8	247.3	242.0	239.6	239.9	237.2	236.9
9	237.4	237.6	236.2	248.4	244.4	246.8	246.9	241.7	239.4	240.1	237.2	236.9
10	237.7	237.4	236.5	248.5	244.6	247.1	246.5	241.4	239.9	240.0	237.2	236.9
11	237.9	237.2	236.6	247.7	243.9	247.2	246.3	241.1	240.5	240.0	237.2	236.8
12	238.0	237.1	237.1	246.6	243.3	247.0	246.0	240.9	239.6	239.9	237.2	236.8
13	238.2	236.8	237.8	245.7	243.1	246.9	246.4	240.7	239.1	239.7	237.2	236.7
14	238.3	236.6	237.5	245.1	242.9	246.9	246.6	240.6	238.8	239.5	237.1	236.3
15	238.4	237.0	237.3	244.6	242.7	246.7	246.0	240.5	238.7	239.7	237.1	236.0
16	238.5	237.1	237.2	244.2	242.7	246.7	245.5	240.5	238.7	239.6	237.0	235.3
17	238.5	237.1	237.5	243.9	242.3	247.1	245.1	240.4	238.6	239.4	237.0	236.3
18	238.7	237.2	239.0	243.6	242.9	247.6	244.8	240.2	238.6	239.0	237.1	235.9
19	238.9	237.8	240.2	243.5	242.4	248.2	244.7	240.1	238.8	238.7	237.1	235.1
20	238.5	238.3	239.7	244.0	242.0	248.2	244.5	240.2	238.8	238.5	237.0	234.7
21	239.0	238.0	240.1	245.0	241.9	248.2	244.4	240.3	238.7	239.2	237.0	234.7
22	239.1	238.3	241.1	245.0	241.6	248.2	244.2	240.3	238.8	239.4	237.0	234.8
23	239.1	238.2	241.4	245.2	241.4	248.5	244.2	240.2	239.1	238.8	237.4	234.8
24	239.0	238.5	241.6	244.9	241.7	248.6	244.6	240.1	240.2	238.3	237.5	234.6
25	238.9	238.3	244.1	244.1	242.2	248.7	244.8	241.1	241.1	238.0	237.4	234.5
26	238.7	236.7	247.0	243.3	242.7	248.4	245.0	241.8	239.6	238.0	237.0	235.1
27	238.6	235.9	246.1	242.8	243.1	248.2	245.0	241.1	238.9	238.1	236.5	235.5
28	238.4	235.7	244.8	242.4	243.0	247.8	245.0	241.0	240.2	237.9	236.2	235.8
29	238.3	235.2	244.5	242.1	242.8	247.5	244.6	241.1	241.5	237.8	235.9	236.3
30	238.8		244.3	241.9	242.9	247.2	244.7	241.0	240.8	237.7	235.6	236.9
31	240.1		244.4		243.8		244.7	241.1		237.7		237.4

Missouri River.—Waverly, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	237.30	236.77*	246.05	240.97	243.77	243.15	245.70	243.37	240.62	238.37	238.00	237.27
2	237.30	236.70	247.60	241.67	243.30	243.52	245.50	243.45	240.73	238.22	238.00	237.25
3	237.22	236.62	249.10	242.60	243.27	243.62	245.57	243.12	240.45	238.10	238.03	237.20
4	236.97	237.00	250.35	241.72	242.80	243.77	245.65	242.60	240.90	237.95	238.10	237.17
5	236.97	239.40	251.15	241.32	242.25	243.32	245.67	242.37	241.45	237.82	238.10	237.15
6	237.72	240.90	251.85	241.02	241.95	243.35	245.80	242.30	240.57	237.77	238.55	237.15
7	237.85	245.60	251.27	241.00	241.97	244.17	245.97	242.20	240.15	237.70	238.50	237.30
8	237.95	251.85	250.97	241.32	241.80	244.35	245.90	242.10	241.13	237.67	237.95	237.30
9	238.32	250.10	252.70	241.35	241.32	244.12	245.82	242.40	241.65	237.60	237.60	237.00
10	238.85	248.40	252.32	241.37	240.90	243.87	245.60	242.60	241.45	237.53	237.47	234.92
11	239.07	246.77	254.30	241.22	240.60	244.70	245.52	242.80	240.75	237.45	237.40	234.17
12	239.30	246.85	255.60	240.90	240.40	246.17	245.33	244.80	240.27	237.47	237.53	233.85
13	239.50	247.90	256.05	241.02	240.20	246.22	245.07	243.97	240.57	237.67	237.70	233.77
14	239.52	247.97	247.00	241.45	240.00	247.10	245.00	242.95	240.52	237.75	237.80	233.60
15	239.35	247.87	242.87	241.72	239.80	246.70	244.97	242.22	240.42	237.73	237.87	233.47
16	239.05	247.52	242.75	242.62	239.65	247.10	244.85	241.75	240.47	237.70	237.77	233.42
17	238.77	247.02	243.10	242.65	239.85	247.30	244.93	241.40	240.40	237.75	237.62	233.40
18	238.42	246.90	242.93	242.20	240.10	247.67	244.65	241.02	240.32	237.77	237.52	233.40
19	238.17	246.90	242.67	241.65	240.60	247.95	244.35	240.75	240.33	238.25	237.50	233.55
20	237.93	246.90	242.37	241.00	241.55	247.90	244.05	240.55	240.30	238.80	237.57	233.95
21	237.77	246.80	242.02	240.30	241.97	247.72	243.77	240.42	239.93	238.28	237.63	234.20
22	237.70	246.57	241.50	241.05	241.97	247.45	243.65	240.25	239.53	237.90	237.62	234.35
23	237.70	246.22	241.07	240.80	241.62	247.05	243.52	240.07	239.22	237.72	237.62	235.05
24	237.62	245.87	240.85	240.50	241.48	246.82	243.55	240.00	239.02	237.65	237.53	236.30
25	237.45	245.52	240.67	240.97	242.15	246.62	243.70	240.00	238.97	237.65	237.48	236.13
26	237.35	245.30	241.32	242.55	242.22	246.42	244.10	240.10	238.90	237.68	237.40	235.90
27	237.32	245.15	241.92	242.57	242.32	246.45	244.27	240.05	238.75	237.77	237.35	235.90
28	237.22	245.07	241.52	242.42	242.82	246.35	243.97	240.10	238.57	237.92	237.35	236.13
29	237.17		241.25	242.20	242.47	246.15	243.82	240.10	238.47	238.20	237.30	236.97
30	237.02		241.15	243.32	242.60	245.95	243.67	240.10	238.43	237.93	237.30	237.10
31	236.87		241.07		242.97		243.42	240.25		237.85		236.90

Missouri River.—Lexington, Mo., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					261.1	265.1	268.5	.....	.....	257.1	256.2	259.6
2					261.2	265.6	268.6	.....	.....	257.1	256.2	259.3
3					261.1	266.8	268.7	.....	.....	257.1	256.2	259.0
4					261.1	266.6	268.9	.....	.....	257.3	256.1	258.3
5					261.6	266.7	269.1	.....	.....	257.2	256.1	258.3
6					261.6	267.6	269.1	.....	.....	257.1	256.1	258.2
7					261.6	267.7	269.2	.....	.....	257.1	256.1	258.1
8					261.5	267.4	269.1	.....	.....	257.0	256.1	257.8
9					263.1	267.0	268.7	.....	.....	256.9	256.1	257.6
10					262.8	267.0	268.3	.....	.....	256.8	256.1	257.5
11					261.6	.....	.....	.....	.....	256.7	256.0	257.3
12					261.1	.....	.....	.....	.....	256.7	256.0	257.1
13					260.9	.....	.....	.....	.....	256.6	256.0	257.1
14					260.8	.....	.....	.....	.....	256.6	256.0	257.1
15					260.5	.....	.....	.....	.....	256.6	255.9	257.1
16					260.3	.....	.....	.....	.....	256.5	255.9	257.1
17					260.1	.....	.....	.....	.....	256.5	255.8	257.1
18					260.0	.....	.....	.....	.....	256.6	255.7	257.0
19					260.2	.....	.....	.....	.....	256.5	255.6	257.1
20					260.3	266.5	.....	.....	.....	256.4	255.6	257.9
21					260.8	267.3	.....	.....	.....	256.4	255.6	258.2
22					262.6	267.2	.....	.....	.....	256.4	255.6	258.1
23					263.0	267.1	.....	.....	.....	256.4	255.8	258.0
24					263.3	267.2	.....	.....	.....	256.3	255.9	258.3
25					263.3	266.6	.....	.....	.....	256.3	256.0	260.3
26					264.3	268.7	.....	.....	.....	256.3	256.1	260.2
27					264.5	268.5	.....	.....	.....	256.3	256.5	260.2
28				261.6	266.1	268.6	.....	.....	.....	256.3	256.5	259.3
29				261.3	265.8	268.5	.....	.....	.....	256.3	256.5	258.8
30				260.7	265.1	268.5	.....	.....	.....	256.3	256.3	258.6
31					264.6	.....	.....	.....	.....	256.3	.....	.....

Missouri River.—Lexington, Mo., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					258.5	258.1	263.1	.....	257.6	256.2	255.3	254.1
2					258.5	.....	263.3	.....	257.4	256.2	255.3	254.0
3					258.5	257.5	.....	.....	257.1	256.1	255.3	254.0
4					258.3	257.5	.....	.....	257.0	255.9	255.3	253.8
5					258.3	257.6	.....	.....	256.8	.....	255.3	254.3
6					258.0	260.6	.....	.....	256.7	255.8	255.4	254.3
7					257.6	262.3	.....	.....	256.6	255.7	255.4	254.3
8					257.5	263.8	.....	.....	256.6	255.6	255.5	254.3
9					257.3	264.8	.....	.....	256.4	255.6	255.5	254.3
10					257.1	265.1	.....	.....	256.3	255.5	255.5	254.3
11					257.1	265.1	.....	.....	256.3	255.4	255.5	254.3
12					257.8	264.6	.....	.....	256.2	255.4	255.4	254.3
13					258.1	264.6	.....	.....	256.2	255.3	255.4	254.5
14					257.8	265.1	.....	.....	256.6	255.3	255.4	254.8
15					257.6	265.6	.....	.....	256.7	255.3	255.3	254.8
16					257.4	265.6	.....	.....	256.7	255.3	255.3	254.7
17					257.3	266.1	.....	257.5	256.6	255.3	255.4	254.7
18					257.3	266.2	.....	257.4	256.6	255.3	255.4	254.6
19					257.2	266.2	.....	257.3	256.7	255.3	255.4	254.6
20					257.1	266.2	.....	257.2	256.7	255.3	255.4	254.6
21						265.9	.....	257.1	256.8	255.3	255.4	254.3
22					257.5	265.6	.....	257.1	257.0	255.4	.....	254.3
23					257.6	265.3	.....	256.9	256.9	255.4	255.0	254.2
24					257.9	264.6	.....	256.9	256.8	255.4	254.7	254.1
25					259.6	264.1	.....	256.9	256.7	255.4	254.3	254.0
26					259.6	263.8	.....	257.1	256.6	255.4	254.3	253.7
27					259.3	263.6	.....	257.9	256.5	255.4	254.2	254.0
28					258.8	263.5	.....	259.1	256.5	255.4	254.2	254.0
29					258.6	263.3	.....	258.9	256.4	255.3	254.2	253.7
30					258.3	263.1	.....	257.3	256.3	255.3	254.2	253.6
31					258.3	.....	.....	258.0	.....	255.3	254.2	253.6

Missouri River.—Lexington, Mo., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	253.6	.....	.....	260.1	267.8	261.1	266.8	264.4	261.8	259.7	256.6	254.5
2	253.6	.....	.....	260.4	267.3	261.3	266.2	263.1	261.7	259.5	256.6	254.4
3	253.3	.....	.....	259.7	266.6	262.3	265.6	262.9	261.8	259.3	256.5	254.3
4	253.3	.....	.....	259.3	266.1	263.3	265.6	262.9	262.0	259.1	256.5	254.3
5	253.3	.....	.....	258.7	265.8	264.0	266.1	262.6	262.3	259.1	256.4	254.6
6	253.7	.....	.....	258.6	265.2	264.0	266.3	262.5	262.5	259.1	256.4	254.8
7	253.6	.....	.....	259.3	264.6	263.7	266.1	262.4	263.8	259.0	256.4	254.8
8	253.3	.....	.....	260.6	264.1	263.9	265.7	262.2	263.7	258.9	256.4	254.7
9	.....	.....	.....	260.6	264.1	264.1	265.8	261.8	263.5	257.3	256.4	254.7
10	.....	.....	256.3	260.7	263.3	263.7	265.9	261.6	263.3	257.3	256.4	254.7
11	.....	.....	256.9	262.0	263.0	263.6	265.7	261.3	262.8	257.4	256.4	254.6
12	.....	.....	256.3	261.8	262.7	263.3	265.6	261.2	262.5	257.5	256.3	254.6
13	.....	.....	256.0	261.8	262.3	263.1	265.9	261.1	262.1	257.4	256.3	254.6
14	.....	.....	255.6	262.1	262.0	262.6	266.1	261.1	261.7	257.3	256.3	254.6
15	.....	.....	255.3	261.8	261.8	262.4	266.1	260.9	261.6	257.2	256.3	254.6
16	.....	.....	255.0	261.5	261.8	262.2	265.9	260.8	261.4	257.1	256.3	255.0
17	.....	.....	255.0	262.1	261.5	262.1	265.5	260.8	261.3	257.1	256.2	255.1
18	.....	.....	255.0	263.1	261.3	261.7	265.1	260.7	261.3	257.2	256.2	255.1
19	.....	.....	255.0	262.7	261.0	262.8	264.8	260.5	261.5	257.2	256.1	255.1
20	.....	.....	254.9	261.7	261.3	262.5	264.6	261.1	261.6	257.1	256.1	255.1
21	.....	.....	256.1	261.0	261.5	263.1	264.3	260.0	261.6	257.1	256.1	255.1
22	.....	.....	256.0	261.0	261.1	264.4	263.3	259.8	261.6	257.1	256.1	255.1
23	.....	.....	255.2	261.3	261.1	264.6	263.5	259.7	261.5	257.0	256.0	255.1
24	.....	.....	255.9	262.5	261.1	264.7	263.2	259.6	261.1	256.9	256.0	255.1
25	.....	.....	255.8	264.2	261.0	265.1	263.1	259.5	260.9	256.9	255.8	255.1
26	.....	.....	255.5	265.5	260.6	265.7	263.4	259.3	260.6	256.8	255.8	255.1
27	.....	.....	255.8	266.4	261.0	266.3	263.2	259.9	260.3	256.8	255.8	255.4
28	.....	.....	256.7	267.0	260.8	266.8	263.9	259.9	260.1	256.7	255.5	255.5
29	.....	.....	257.8	267.5	261.0	267.1	263.6	260.6	260.0	256.7	255.0	255.3
30	.....	.....	258.1	267.7	261.1	267.1	263.0	261.3	260.1	256.6	254.6	256.0
31	.....	.....	258.5	.....	261.1	265.2	265.2	261.7	260.1	256.6	254.6	255.7

Missouri River.—Lexington, Mo., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	255.7	255.0	255.2	261.3	262.5	260.5	267.3	261.8	258.3	259.6	256.9	254.7
2	255.6	254.3	255.2	262.3	262.3	260.4	266.6	261.7	257.3	259.5	257.1	254.6
3	255.5	254.3	255.1	262.3	262.0	260.5	266.6	261.6	258.7	259.3	257.0	254.6
4	255.6	254.3	255.1	262.2	261.4	260.4	266.5	261.3	259.3	259.1	256.9	254.5
5	255.5	254.3	255.0	262.1	261.9	261.6	266.7	261.1	260.3	259.1	256.8	254.4
6	255.5	254.3	255.0	261.8	263.3	262.2	266.9	261.1	260.8	259.0	256.7	254.3
7	255.3	254.3	254.9	261.7	263.9	262.0	266.7	261.0	261.3	258.6	256.6	254.3
8	255.3	255.1	255.3	262.3	263.9	262.1	266.0	261.0	262.0	258.5	256.6	254.4
9	255.3	251.8	256.5	262.3	263.3	261.9	265.7	260.8	261.8	258.3	256.5	254.3
10	255.2	255.3	256.9	262.1	263.1	263.9	265.7	260.8	261.6	258.1	256.4	254.3
11	255.1	255.5	257.9	261.8	263.1	264.1	265.6	260.7	261.5	258.0	256.3	254.3
12	255.0	255.8	257.9	261.7	263.1	265.0	265.3	260.7	261.7	257.8	256.3	254.3
13	255.0	255.9	257.9	262.4	263.1	265.9	265.3	260.8	261.9	257.6	256.2	254.5
14	255.0	255.8	257.6	264.6	263.0	267.1	265.1	260.9	262.0	257.4	256.1	254.6
15	254.9	255.8	257.6	264.6	263.0	267.5	265.2	260.8	262.0	257.3	256.1	254.6
16	254.9	255.8	258.3	266.1	261.3	268.1	264.6	260.6	261.3	257.1	256.0	254.7
17	254.3	256.1	258.5	266.4	260.9	267.7	264.3	260.6	261.3	256.9	255.9	254.8
18	254.9	256.1	259.0	265.8	260.6	267.4	264.0	261.0	260.8	256.6	255.8	254.7
19	255.8	256.0	259.0	265.6	260.5	267.1	263.9	262.0	260.5	256.5	255.7	254.7
20	255.8	256.0	259.3	265.1	260.3	266.7	263.8	262.0	260.8	256.3	255.6	254.6
21	255.6	256.0	259.3	265.0	260.3	266.5	263.7	261.9	260.8	256.2	255.6	254.6
22	255.6	256.1	259.0	264.7	260.2	267.1	263.6	261.9	260.6	256.1	255.5	254.5
23	255.3	256.1	258.3	264.7	260.1	266.9	263.6	262.6	260.3	256.1	255.4	254.5
24	255.3	255.3	257.8	264.5	259.9	266.7	263.3	263.1	260.0	256.0	255.3	254.4
25	255.3	255.8	258.1	265.2	259.7	267.1	263.0	262.8	259.7	256.3	255.3	254.4
26	255.1	255.8	257.1	265.1	259.4	266.9	262.8	261.5	259.7	256.5	255.2	254.3
27	254.9	255.6	257.7	264.6	259.2	266.6	262.1	260.1	259.6	256.6	255.1	254.3
28	254.5	255.8	258.9	263.3	259.6	267.0	262.1	259.8	259.6	256.7	255.0	254.3
29	255.3	.....	260.0	262.5	259.8	267.1	262.1	259.6	259.7	256.8	254.9	254.3
30	255.3		261.1	262.3	259.8	267.2	262.0	258.7	259.7	256.7	254.8	254.3
31	255.1		261.1		260.1		262.0	258.3		256.4		254.3

Missouri River.—Lexington, Mo., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	254.3	254.8	255.1	258.0	263.6	268.5	268.3	262.3	259.3	257.0	258.5	257.6
2	254.3	254.9	255.2	261.3	263.4	268.5	268.3	262.6	259.1	257.0	258.2	257.3
3	254.3	255.0	255.3	261.8	263.6	268.3	268.6	262.5	259.0	257.1	258.1	257.3
4	254.3	255.0	255.3	262.0	263.5	268.4	268.5	262.3	258.8	257.1	258.0	257.1
5	254.3	255.1	255.2	262.1	263.3	267.8	268.1	262.3	258.6	257.1	257.9	257.3
6	254.3	255.1	255.1	262.2	263.5	267.5	267.6	262.6	258.4	257.1	257.8	257.4
7	254.3	255.1	255.1	262.6	263.5	267.3	267.3	262.4	258.4	257.1	257.7	257.5
8	254.3	255.2	255.0	263.1	263.1	269.6	267.1	262.6	258.3	257.2	258.1	257.5
9	254.3	255.3	254.9	264.6	262.9	270.3	266.6	262.6	258.3	257.2	258.2	257.4
10	254.3	255.4	254.8	265.3	262.6	271.3	266.3	262.9	258.3	257.1	258.0	257.3
11	254.3	255.6	254.8	265.3	262.4	271.6	266.5	262.6	258.6	257.0	257.9	257.3
12	254.3	255.7	254.9	265.0	262.1	271.3	266.7	262.0	258.5	257.0	257.8	257.3
13	254.3	255.3	255.0	264.3	262.0	270.8	266.3	261.6	258.3	256.8	257.8	257.3
14	254.3	255.1	254.9	264.0	262.2	270.6	266.0	261.3	258.1	256.8	257.8	257.3
15	254.3	255.0	254.8	263.7	262.1	270.4	265.8	261.1	258.0	256.8	257.8	257.3
16	254.3	254.9	254.7	263.3	262.3	270.4	265.8	260.8	257.9	256.8	257.8	257.2
17	254.3	255.0	254.6	263.1	265.0	270.1	265.7	260.7	257.9	256.8	257.9	257.1
18	254.3	255.0	254.6	263.3	265.8	270.0	265.6	260.7	257.8	256.8	257.6	256.9
19	254.3	255.1	254.5	264.3	265.4	269.3	265.6	260.6	257.8	257.6	257.6	256.7
20	254.3	255.0	254.6	264.6	265.1	268.1	264.3	260.6	257.7	258.1	257.6	256.6
21	254.3	255.1	254.7	264.3	266.6	267.3	264.3	260.5	257.6	258.2	257.6	256.6
22	254.3	255.1	254.8	264.3	266.8	266.8	264.1	260.3	257.6	258.6	257.6	256.6
23	254.3	255.2	254.6	264.1	267.6	266.6	264.1	260.2	257.6	258.8	257.6	256.6
24	254.3	255.2	255.0	263.8	268.1	266.5	264.0	260.1	257.6	258.9	257.6	256.6
25	254.3	255.1	255.1	263.6	267.6	266.8	263.9	260.2	257.4	259.0	257.6	256.7
26	254.3	255.1	255.1	263.5	267.0	268.7	263.8	260.1	257.4	259.1	257.6	256.7
27	254.3	255.1	255.2	263.3	266.6	268.0	263.7	260.0	257.4	259.1	257.6	256.7
28	254.3	255.0	255.2	263.5	266.1	268.0	263.6	259.9	257.6	259.1	257.6	256.7
29	254.6		255.3	263.5	266.6	267.8	263.6	259.8	257.6	259.1	257.6	256.6
30	254.6		255.4	263.5	267.1	267.8	263.5	259.6	257.3	258.9	257.6	256.8
31	254.6		255.7	263.5	268.1	267.8	263.3	259.5	257.3	258.6	257.6	257.0

Missouri River.—Lexington, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	257.1	257.7	258.8	259.0	264.3	267.0	270.0	266.8	259.8	258.6	257.1	257.4
2	257.2	257.4	258.9	259.2	264.3	266.8	270.1	266.3	259.8	258.4	257.0	257.4
3	257.3	257.3	259.1	259.6	264.5	266.6	270.2	266.1	259.8	258.3	257.0	257.3
4	257.6	257.2	259.1	260.0	264.6	266.6	270.7	266.1	259.8	258.2	257.4	257.2
5	257.5	257.1	259.0	259.9	264.3	266.3	270.3	265.9	259.5	258.1	257.4	257.2
6	257.3	257.0	258.9	259.8	263.3	267.0	270.6	265.7	259.3	258.0	257.3	257.1
7	257.2	256.8	258.6	259.6	264.1	267.3	270.3	265.6	259.3	258.0	257.2	257.0
8	257.1	256.7	258.5	259.5	263.5	267.8	270.1	265.6	259.4	257.9	257.1	257.0
9	257.1	256.7	258.6	259.6	263.1	268.1	269.7	265.5	259.5	257.9	257.0	257.0
10	257.0	256.7	258.7	259.5	263.0	268.3	269.4	265.3	259.5	257.9	257.0	257.0
11	256.9	256.9	258.7	259.3	262.7	269.5	269.1	265.1	259.6	258.0	257.1	256.9
12	256.8	257.0	258.6	259.4	262.6	269.6	268.7	263.7	259.7	258.0	257.1	256.9
13	256.8	257.1	258.5	259.5	262.3	269.5	268.3	263.4	259.7	257.9	257.2	256.8
14	256.7	257.3	258.3	259.6	262.1	269.6	267.8	263.2	259.8	257.8	257.3	256.8
15	256.7	257.7	258.2	259.8	262.0	269.7	267.6	262.8	259.6	257.7	257.3	256.7
16	256.7	257.7	258.1	259.9	261.7	268.6	267.6	262.6	259.5	257.8	257.4	256.6
17	256.7	257.6	258.0	260.1	261.5	268.3	267.0	262.4	259.3	257.9	257.4	256.6
18	256.6	257.6	257.8	260.0	261.7	268.1	266.6	262.1	259.3	257.7	257.5	256.5
19	256.6	257.6	257.7	259.9	261.7	267.3	266.3	261.7	259.1	257.7	257.4	256.5
20	256.7	257.8	257.6	260.1	261.7	266.8	266.1	261.6	259.1	257.6	257.4	256.5
21	256.8	258.0	257.6	260.0	261.6	267.1	266.1	261.4	259.0	257.6	257.5	256.4
22	256.8	258.1	257.5	259.7	261.7	267.7	266.0	261.1	259.0	257.6	257.5	256.3
23	256.7	258.2	257.4	259.6	261.8	267.8	265.9	261.0	258.9	257.5	257.4	256.1
24	256.8	258.3	257.4	259.8	262.1	267.9	265.8	260.9	258.8	257.5	257.4	256.1
25	256.9	258.3	257.4	260.0	262.3	268.1	265.7	260.8	258.7	257.5	257.4	256.1
26	257.0	258.5	257.4	260.2	263.6	268.3	265.6	260.7	258.6	257.5	257.4	256.1
27	257.1	258.6	257.3	261.5	265.3	269.1	265.5	260.5	258.8	257.5	257.5	256.0
28	257.2	258.7	257.3	262.3	265.6	269.2	267.3	260.4	258.9	257.5	257.5	255.9
29	257.2		257.3	263.8	265.7	269.7	267.6	260.2	258.8	257.4	257.5	256.1
30	257.3		257.3	264.5	265.9	269.8	267.8	260.0	258.7	257.3	257.5	256.1
31	257.5		257.3		266.8		267.3	259.8		257.2		256.2

Missouri River.—Lexington, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	256.3	256.6	255.8	260.3	259.8	263.0	269.6	263.8	257.5	255.7	255.1	256.6
2	256.5	256.5	255.9	260.3	259.8	263.0	269.5	263.7	257.5	255.8	255.1	256.5
3	256.4	256.4	255.9	259.9	259.8	262.6	269.2	263.8	257.4	255.8	255.1	256.3
4	256.3	256.5	255.8	260.0	260.3	263.0	269.0	264.0	257.2	255.7	255.1	256.1
5	256.3	256.5	255.9	260.6	260.6	263.5	269.0	263.7	257.1	256.0	255.1	256.1
6	256.3	256.5	255.9	260.5	260.6	263.8	268.3	263.3	257.1	255.6	255.2	257.0
7	256.3	256.4	256.0	263.3	260.7	263.4	267.7	262.9	257.0	255.6	255.4	257.6
8	256.1	256.3	256.0	265.0	260.8	263.1	267.2	262.6	256.7	255.6	255.5	257.6
9	256.0	256.4	256.2	266.3	260.7	263.6	266.9	261.9	256.6	255.6	255.9	257.1
10	256.0	256.5	256.3	266.4	260.5	264.0	266.6	261.7	256.6	255.6	256.1	257.0
11	255.8	256.5	256.6	266.8	260.5	263.7	265.9	261.5	256.6	255.5	256.3	257.0
12	255.7	256.5	256.8	266.7	260.5	263.6	265.5	261.7	256.6	255.5	256.6	256.1
13	255.6	256.6	257.0	265.5	260.4	263.4	265.8	261.0	256.6	255.5	259.0	255.5
14	255.6	256.5	257.3	264.4	260.5	.....	265.5	260.9	256.6	255.5	261.0	255.5
15	255.5	256.3	257.7	262.6	260.7	264.0	264.8	260.5	256.5	255.6	260.6	255.4
16	255.5	256.4	258.0	262.0	260.6	264.8	264.5	260.5	256.5	255.6	260.0	255.3
17	255.4	256.5	258.0	261.7	260.5	265.0	264.6	260.3	256.4	255.6	259.8	255.3
18	255.3	256.4	258.1	261.4	260.5	266.1	264.3	260.0	256.4	255.6	259.1	255.1
19	255.3	256.3	258.2	261.0	260.8	266.8	264.0	259.9	256.2	255.8	258.6	255.0
20	255.3	256.3	258.3	260.6	260.8	267.2	264.0	259.7	256.1	255.8	258.5	254.6
21	255.3	256.3	257.8	260.5	260.8	267.0	264.3	259.6	255.9	255.7	257.9	255.0
22	255.2	256.1	257.5	260.4	260.7	266.5	263.9	259.5	255.8	255.6	257.1	255.3
23	255.2	256.1	257.5	260.0	260.4	265.6	264.5	259.3	255.8	255.6	256.8	255.8
24	255.3	256.0	257.7	260.0	260.4	265.7	265.0	259.2	255.8	255.4	256.8	256.0
25	255.5	256.0	257.7	260.0	260.6	266.8	264.1	259.0	255.7	255.3	256.8	256.3
26	255.5	256.0	257.7	260.0	260.8	267.7	263.7	258.9	255.6	255.3	256.6	256.6
27	255.6	255.9	257.8	260.0	261.0	268.9	263.7	258.7	255.6	255.2	256.6	256.8
28	255.8	255.9	257.8	260.0	261.0	269.3	263.6	258.7	255.6	255.1	256.6	257.1
29	255.9		259.8	259.9	260.8	269.5	263.5	258.6	255.8	255.1	256.8	257.1
30	256.1		259.8	259.8	261.1	269.7	263.5	258.6	255.8	255.1	256.8	256.8
31	256.3		259.9	259.9	261.9		263.8	258.5	255.8	255.1	256.8	256.5

Missouri River.—Lexington, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	256.6	255.4	256.6	257.8	257.8	260.5	264.2	263.1	263.0	257.9	256.2	254.1
2	256.9	255.1	257.1	257.3	257.8	260.3	264.7	263.0	261.4	257.8	256.2	254.0
3	257.0	255.0	256.8	256.3	257.3	259.8	265.3	263.0	261.0	258.7	256.1	254.0
4	256.5	254.9	256.3	257.8	257.3	259.3	265.6	262.7	261.6	258.5	256.1	254.1
5	256.3	254.9	256.0	258.1	257.6	259.8	265.3	262.6	262.1	258.0	256.1	254.2
6	255.8	254.7	255.5	258.6	257.6	260.3	265.0	262.4	262.7	257.4	256.1	254.2
7	255.3	254.3	255.3	262.7	257.8	260.5	264.8	262.3	262.5	257.4	256.1	254.0
8	255.0	254.5	255.3	265.2	257.6	262.0	265.1	261.6	261.7	257.2	256.2	253.9
9	254.5	254.5	255.1	266.2	257.6	261.8	265.8	261.6	260.9	257.0	256.3	253.9
10	254.3	254.6	255.1	263.1	257.6	261.3	265.7	261.4	260.5	256.9	256.4	254.0
11	254.3	254.6	255.0	263.0	257.5	261.1	265.6	261.3	260.1	257.0	256.8	254.0
12	254.3	254.6	255.1	263.0	257.3	261.0	265.4	261.2	259.8	256.8	256.8	254.1
13	254.5	254.8	255.8	262.6	257.1	260.8	265.6	261.1	259.6	256.8	256.7	254.1
14	254.7	254.8	255.6	262.3	257.1	260.6	265.6	261.1	259.4	257.0	256.6	254.0
15	254.8	254.9	255.3	261.8	257.0	261.0	265.9	261.0	259.2	257.3	256.6	254.2
16	254.6	255.1	255.3	261.5	256.8	261.1	266.1	260.9	259.0	257.2	256.6	254.3
17	254.7	255.3	255.1	261.1	256.8	261.3	265.6	260.0	258.7	257.1	256.5	254.4
18	254.6	255.3	255.1	260.6	256.8	263.1	266.0	259.8	258.5	257.2	256.3	254.4
19	254.6	255.3	255.1	260.3	256.7	262.8	265.8	259.5	258.5	257.4	255.9	254.2
20	254.6	255.6	255.0	259.7	256.6	262.7	265.6	259.4	258.4	257.5	255.3	254.1
21	254.5	255.8	255.0	259.3	256.6	263.0	265.5	259.4	258.3	257.4	254.9	254.1
22	254.5	256.0	255.6	258.8	256.6	263.3	265.3	259.3	258.3	257.4	254.3	254.1
23	254.5	255.6	255.6	258.3	256.6	264.3	265.3	259.4	258.2	257.3	254.0	254.1
24	254.6	255.5	255.6	257.8	256.6	264.8	265.1	259.4	258.0	257.0	254.0	254.3
25	254.6	255.3	255.9	259.6	257.3	264.0	264.8	260.2	257.9	256.8	254.0	254.4
26	254.6	256.0	256.1	260.0	258.0	264.0	264.6	260.7	258.2	256.7	254.0	254.5
27	254.5	255.8	257.7	259.8	258.4	263.8	264.1	260.3	257.9	256.7	254.0	254.3
28	254.8	256.1	257.7	259.3	259.3	263.8	263.8	260.2	258.0	256.5	254.0	254.0
29	255.0	256.1	257.8	258.8	260.3	264.0	263.6	260.5	258.3	256.5	253.9	253.8
30	255.1		257.9	258.3	260.5	264.3	263.3	260.9	258.2	256.4	254.0	253.7
31	255.6		258.1		260.5		263.1	261.7		256.4		253.9

Missouri River.—Lexington, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	254.8	254.1	258.0	267.6	276.3	265.3	265.0	260.2	257.0	256.8	257.7	256.6
2	255.2	254.1	258.1	268.0	275.8	266.4	265.3	260.1	257.2	256.7	257.9	256.4
3	255.3	254.0	258.5	267.5	274.5	266.8	265.3	260.0	257.0	256.7	257.9	256.4
4	255.3	254.0	259.1	268.6	272.8	266.7	264.7	259.9	256.9	256.7	257.9	256.4
5	255.3	254.0	259.6	269.3	271.1	266.3	264.1	259.7	256.9	256.8	258.0	256.2
6	255.3	254.7	258.8	269.4	268.9	265.9	263.6	259.5	256.8	256.8	257.9	255.9
7	255.2	259.4	258.9	269.5	267.5	265.5	263.1	259.4	256.8	256.8	257.8	255.9
8	255.1	260.3	259.0	269.7	267.0	265.0	262.6	259.4	256.8	256.9	257.7	255.9
9	254.9	259.7	259.7	269.9	266.7	264.8	262.3	259.3	256.8	256.4	257.8	256.0
10	254.9	259.4	259.9	270.3	266.8	265.0	262.2	259.1	257.0	256.4	257.9	256.0
11	254.9	258.7	261.0	270.5	266.7	265.1	262.1	258.9	257.0	256.4	258.2	255.9
12	255.0	257.6	262.4	270.6	265.9	265.7	262.5	258.8	257.3	256.4	259.6	255.9
13	254.8	257.0	263.5	270.7	265.6	265.3	263.1	258.8	257.9	256.6	259.4	256.0
14	254.6	256.7	263.4	270.7	265.6	265.4	263.3	258.6	257.9	256.8	258.9	255.9
15	254.6	256.4	264.4	269.1	265.6	265.4	263.2	258.6	257.6	257.0	258.6	255.9
16	254.6	256.1	266.3	268.3	265.5	265.6	263.1	258.5	257.4	257.7	258.3	255.8
17	254.6	256.0	265.0	267.8	265.4	266.3	263.1	258.3	257.4	258.4	258.1	255.8
18	254.6	256.3	265.1	267.8	265.3	266.7	262.9	258.3	257.4	258.9	258.1	255.8
19	254.6	256.3	264.8	268.0	265.0	266.6	262.6	258.2	257.4	258.8	258.0	255.9
20	254.5	256.9	264.4	268.7	264.9	265.8	262.1	258.1	257.4	258.5	257.8	255.9
21	254.5	256.2	264.2	269.7	265.3	265.2	261.9	257.9	257.4	258.2	257.6	256.0
22	254.5	256.0	263.9	270.1	266.4	264.7	261.8	257.8	257.3	257.8	257.1	256.2
23	254.5	256.7	263.7	270.3	266.7	264.5	261.7	257.6	257.1	257.7	256.7	256.2
24	254.4	256.5	263.1	270.9	266.4	264.1	261.5	257.5	256.9	257.6	256.5	256.2
25	254.4	256.3	264.1	271.5	265.8	264.3	261.2	257.3	256.8	257.5	256.0	256.3
26	254.4	257.1	264.3	272.1	265.1	264.4	260.9	257.2	256.6	257.4	255.5	256.4
27	254.3	258.5	264.4	272.7	264.6	264.2	260.8	257.1	256.6	257.4	255.3	256.4
28	254.3	258.6	265.4	273.5	264.0	264.3	260.8	257.0	256.5	257.3	255.4	256.4
29	254.3		267.1	275.0	263.6	264.9	260.6	257.0	256.5	257.3	255.8	256.3
30	254.2		267.5	276.2	263.4	265.2	260.4	257.1	256.7	257.4	256.2	256.1
31	254.1		267.5		264.0		260.2	257.0		257.5		255.9

Missouri River.—Lexington, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	255.7	254.3	255.0	256.1	258.8	262.4	267.6	260.9	256.1	254.3	254.8	253.6
2	255.4	254.2	255.4	256.1	259.1	261.9	267.7	261.3	255.9	254.2	254.8	253.6
3	254.9	254.3	256.3	256.2	259.6	261.4	267.9	261.2	255.9	254.2	254.7	253.5
4	254.5	254.5	257.0	256.5	259.7	260.9	267.8	260.6	255.9	254.2	254.6	253.3
5	254.1	254.6	257.5	256.8	259.4	260.5	267.6	259.9	255.8	254.2	254.7	253.3
6	253.7	254.6	257.6	256.8	259.2	260.3	267.0	259.5	255.8	254.2	254.7	253.2
7	253.6	254.8	257.8	256.7	258.8	260.1	266.3	259.3	255.6	254.2	254.6	253.0
8	253.5	255.1	258.4	257.1	258.7	259.8	265.7	259.1	255.6	254.3	254.5	252.4
9	253.6	255.6	258.6	257.9	258.5	259.6	265.2	258.9	255.5	254.3	254.5	251.4
10	254.0	255.3	258.0	259.0	258.6	259.5	264.8	258.7	255.4	254.4	254.6	251.4
11	254.2	255.0	257.4	259.8	258.7	259.6	264.3	258.7	255.3	254.4	254.6	251.2
12	254.3	255.0	256.7	261.3	258.8	259.6	264.1	258.5	255.2	254.4	254.6	251.1
13	254.5	255.2	256.3	263.8	258.9	259.8	263.9	258.3	255.1	254.7	254.5	251.2
14	254.6	255.7	256.3	264.8	259.0	260.7	263.9	258.1	255.0	254.9	254.5	251.3
15	254.7	256.5	256.6	263.8	259.1	262.0	264.0	257.9	254.9	255.4	254.7	251.4
16	254.8	256.6	256.5	262.8	259.9	262.3	264.1	257.7	254.9	255.8	254.8	251.4
17	254.6	256.4	256.4	262.0	260.8	262.5	264.4	257.5	254.8	255.7	255.0	251.3
18	254.1	256.2	256.2	261.5	260.5	262.6	264.6	257.3	254.6	255.5	254.9	251.3
19	253.6	256.2	256.4	261.0	260.3	263.6	264.6	257.1	255.1	255.4	254.9	251.4
20	253.4	256.1	257.0	260.7	259.9	265.3	264.1	257.0	254.8	255.4	254.7	251.8
21	254.0	255.8	257.2	260.2	259.7	266.0	263.5	256.9	254.6	255.2	254.6	253.1
22	254.2	255.4	257.1	260.1	260.6	266.3	263.0	256.7	254.6	255.0	254.4	252.9
23	254.0	254.4	256.7	260.2	261.2	266.1	262.7	256.5	254.4	255.0	254.4	252.5
24	254.3	253.6	256.4	260.2	261.0	265.9	262.3	256.5	254.4	254.9	254.3	252.3
25	254.1	253.3	256.1	259.9	260.7	266.2	261.8	256.4	254.3	254.9	254.3	252.3
26	254.8	253.3	256.1	259.5	260.6	266.4	261.5	256.3	254.3	254.9	254.3	252.3
27	254.8	253.7	256.1	259.4	260.8	266.6	261.2	256.2	254.3	255.0	254.2	252.3
28	254.5	254.2	256.2	259.5	261.4	267.0	260.9	256.2	254.2	255.2	254.0	252.3
29	254.6		256.2	259.4	261.7	267.2	260.6	256.1	254.3	255.3	253.9	252.4
30	254.6		256.3	259.1	262.2	267.4	260.3	256.1	254.3	255.2	253.7	252.3
31	254.5		256.2		262.5		260.8	256.1		255.0		252.3

Missouri River.—Lexington, Mo., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	252.5	254.0	258.0	259.7	259.4	264.2	271.6	261.9	258.3	256.0	257.3	255.3
2	252.2	254.0	257.5	259.6	259.2	263.7	271.1	261.4	258.1	256.5	257.1	255.1
3	251.7	254.0	257.2	259.4	259.2	263.8	270.1	261.0	258.0	256.3	256.9	255.0
4	251.9	253.9	257.5	259.6	259.2	264.5	268.9	260.9	257.8	256.1	256.8	254.8
5	251.8	253.9	258.0	259.7	259.2	265.8	268.1	261.0	257.6	256.4	256.8	254.7
6	251.8	253.8	259.3	259.8	259.0	266.4	267.7	261.0	257.4	256.4	257.3	254.6
7	252.3	253.7	259.5	259.9	258.8	265.8	267.7	260.6	257.2	256.4	257.3	254.6
8	253.3	253.6	258.8	259.9	258.8	265.5	267.8	260.1	257.1	256.5	257.4	254.6
9	254.4	253.6	258.2	259.8	258.6	265.8	267.8	260.0	256.9	256.6	257.2	254.6
10	254.3	253.6	257.9	259.7	258.6	265.9	267.7	259.9	256.8	256.5	257.0	254.7
11	254.2	253.5	258.0	259.5	258.8	265.6	267.9	260.0	256.7	256.3	257.0	254.8
12	254.2	253.5	259.4	259.4	259.1	265.8	268.4	260.0	256.6	256.2	256.8	254.9
13	254.5	253.4	259.5	259.2	259.9	267.3	269.0	259.9	256.5	256.1	256.7	255.0
14	254.1	254.4	259.0	259.0	261.3	266.8	268.6	259.8	256.4	256.1	256.6	255.1
15	254.2	256.3	258.9	259.4	261.7	267.0	268.5	260.3	256.3	256.1	256.5	255.2
16	254.2	259.8	259.3	260.1	261.9	267.3	267.8	260.1	256.3	256.0	256.4	255.3
17	254.1	258.1	259.9	260.3	263.3	269.6	266.9	260.1	256.2	256.0	256.3	255.3
18	254.1	256.3	259.9	261.6	264.1	270.0	266.2	259.9	256.2	256.1	256.1	255.3
19	253.9	257.8	259.9	262.2	264.6	270.6	265.4	260.0	256.1	256.2	255.9	255.4
20	253.8	258.0	260.0	263.3	265.1	271.1	264.5	260.9	256.1	256.3	255.6	254.7
21	253.8	257.7	260.2	264.0	264.8	271.5	263.9	261.6	255.9	257.0	255.6	253.8
22	253.8	257.2	259.9	263.3	264.2	271.4	263.5	261.1	255.9	257.1	255.5	253.9
23	253.8	256.7	259.1	262.2	263.8	271.3	263.1	260.8	256.0	256.9	255.4	253.9
24	253.9	257.1	258.5	261.4	263.6	271.5	263.1	260.3	256.0	256.8	255.6	253.6
25	253.9	258.6	258.3	260.6	263.7	271.9	262.4	259.8	255.9	256.9	255.8	253.6
26	253.9	258.8	258.2	260.3	266.4	272.4	262.2	259.6	256.0	257.3	256.0	253.6
27	254.0	258.9	260.0	260.0	267.1	272.8	262.0	259.3	256.0	257.6	255.9	253.7
28	254.0	258.7	261.0	260.1	266.5	272.6	261.7	259.1	256.1	257.6	255.8	253.6
29	254.0		260.7	260.0	265.6	272.3	261.6	258.9	256.1	257.5	255.6	253.2
30	254.0		260.4	259.6	265.0	271.9	262.1	258.7	256.1	257.6	255.4	253.2
31	254.0		260.1		264.5		262.7	258.5		257.5		253.7

Missouri River.—Lexington, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	253.6	256.4	254.8	262.6	260.6	262.8	264.7	263.2	259.6	259.0	257.0	255.2
2	252.6	256.3	254.8	262.8	261.7	263.0	264.5	263.3	259.4	258.7	257.0	255.3
3	253.8	256.0	254.8	263.2	262.4	263.2	264.7	262.6	259.3	258.7	257.0	255.4
4	254.1	255.9	255.0	263.6	262.7	263.4	265.4	262.1	259.1	259.0	257.0	255.4
5	253.7	255.8	255.1	264.3	262.9	263.7	266.0	261.7	258.9	258.9	256.9	255.6
6	254.3	255.8	255.4	266.2	263.2	263.7	266.1	261.2	258.7	258.6	256.8	255.7
7	254.7	255.7	255.6	267.0	263.3	263.5	266.0	260.7	258.6	258.8	256.7	256.0
8	254.9	255.6	255.6	267.4	262.9	263.8	265.7	260.3	258.6	259.3	256.6	256.2
9	255.1	255.6	255.4	267.7	263.0	264.8	265.2	260.0	258.4	259.5	256.6	256.2
10	255.3	255.5	255.4	267.9	263.1	265.2	264.9	259.7	259.2	259.4	256.6	256.1
11	255.4	255.4	255.5	267.0	262.3	265.3	264.6	259.5	259.4	259.3	256.6	256.1
12	255.4	255.4	256.3	265.5	261.7	265.0	264.2	259.3	258.5	259.2	256.5	256.0
13	255.4	255.5	256.8	264.3	261.4	264.9	264.4	259.2	258.1	259.0	256.5	256.0
14	255.5	255.7	256.4	263.5	261.2	264.8	264.7	259.1	258.0	259.0	256.5	255.6
15	255.6	255.6	256.5	262.9	261.0	264.6	264.0	259.0	257.9	259.1	256.5	255.4
16	255.6	255.5	256.2	262.6	261.0	264.6	263.4	259.0	257.9	258.9	256.5	254.7
17	255.7	255.4	256.6	262.3	260.5	265.0	263.1	258.9	257.9	258.7	256.5	254.1
18	255.7	255.4	258.1	262.0	261.1	266.0	262.8	258.7	257.9	258.4	256.5	253.5
19	255.8	255.8	259.1	261.9	260.6	266.8	262.7	258.7	258.0	258.1	256.4	253.3
20	255.8	256.2	258.8	262.5	260.4	266.8	262.6	258.9	258.0	257.8	256.4	254.7
21	255.9	256.2	259.3	263.5	260.2	266.4	262.6	258.8	258.0	258.4	256.4	254.7
22	255.9	256.3	260.3	263.5	259.9	266.4	262.5	258.8	258.0	258.6	256.4	254.8
23	255.8	256.3	260.5	263.9	259.7	266.8	262.3	258.8	258.4	258.0	256.6	254.7
24	255.8	255.4	260.7	263.5	260.1	267.1	262.4	258.8	259.6	257.6	256.7	254.7
25	255.7	255.6	264.1	262.5	260.6	267.3	262.7	259.7	259.7	257.4	256.5	254.8
26	255.6	255.5	267.1	261.8	261.1	267.1	263.0	260.1	258.4	257.3	256.3	255.0
27	255.6	255.2	265.4	261.3	261.4	266.6	263.2	259.5	257.9	257.3	256.0	255.3
28	255.4	255.0	263.9	260.9	261.3	266.2	263.1	259.6	259.4	257.2	255.7	255.5
29	255.3	254.9	263.4	260.5	261.2	265.6	262.8	259.7	260.2	257.1	255.4	255.8
30	255.9		263.2	260.4	261.3	265.0	262.9	259.5	259.5	257.1	255.3	256.2
31	256.7		263.0		262.3		263.0	259.6		257.1		256.3

Missouri River.—Lexington, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	256.27	255.40	262.53	260.27	262.82	262.50	265.17	262.72	259.12	256.87	256.77	255.35
2	256.20	255.40	263.80	261.15	262.50	262.90	265.05	262.80	259.23	256.77	256.87	255.27
3	256.05	255.42	265.25	261.90	262.50	263.07	265.23	262.35	258.95	256.70	256.95	255.20
4	255.97	256.30	268.40	261.00	261.75	263.25	265.35	261.95	259.47	256.55	256.95	255.15
5	255.97	258.10	269.20	260.87	261.25	262.47	265.42	261.80	259.95	256.47	257.02	255.27
6	256.33	259.20	272.05	260.70	261.15	262.55	265.52	261.62	259.05	256.42	257.55	255.30
7	256.45	260.95	272.30	260.77	261.12	263.55	265.70	261.50	258.70	256.37	257.52	255.30
8	256.67	260.00	272.90	261.12	260.87	263.57	265.55	261.40	259.90	256.35	257.00	255.25
9	257.02	261.65	271.75	261.10	260.52	263.30	265.47	261.65	260.30	256.30	256.75	254.10
10	257.32	263.87	266.15	261.00	260.10	263.00	265.37	261.85	260.15	256.25	256.67	253.05
11	257.55	263.20	265.72	261.00	259.87	264.35	265.33	262.55	259.30	256.17	256.65	252.60
12	257.65	264.03	264.35	260.65	259.73	266.15	264.92	264.30	258.85	256.20	256.75	252.42
13	257.62	264.20	263.62	260.90	259.63	266.15	264.60	263.00	259.17	256.32	256.87	252.32
14	257.43	264.07	262.50	261.10	259.53	268.32	264.55	262.00	258.02	256.42	256.95	252.33
15	257.12	263.92	261.80	261.42	259.32	267.80	264.30	261.30	258.97	256.40	256.97	252.27
16	256.72	263.37	261.80	262.25	259.12	268.20	264.10	260.90	259.05	256.45	256.85	252.22
17	256.50	263.07	262.15	262.00	259.35	268.60	264.10	260.35	259.03	256.50	256.67	252.05
18	256.30	263.05	261.72	261.42	259.57	268.95	263.67	259.90	258.95	256.55	256.65	252.02
19	256.05	262.95	261.60	260.82	260.07	269.15	263.30	259.62	258.95	256.97	256.00	252.22
20	255.90	262.92	261.57	260.17	260.72	268.60	262.90	259.35	258.85	257.27	255.45	252.45
21	255.85	262.85	261.00	259.62	261.00	268.35	262.62	259.15	258.45	256.92	255.60	252.62
22	255.80	262.67	260.50	260.05	260.97	267.85	262.40	258.90	258.07	256.65	255.60	252.80
23	255.77	262.30	260.22	259.85	260.67	267.15	262.22	258.65	257.75	256.52	255.60	253.75
24	255.75	261.95	259.98	259.85	260.75	266.90	262.40	258.55	257.57	256.42	255.50	254.50
25	255.72	261.75	260.05	260.30	261.30	266.52	262.67	258.52	257.47	256.40	255.40	253.95
26	255.65	261.68	260.72	261.45	261.30	266.10	263.12	258.57	257.37	256.45	255.40	253.95
27	255.60	261.57	261.05	261.62	261.42	265.95	263.37	258.60	257.27	256.47	255.40	253.92
28	255.52	261.50	260.65	261.47	261.85	265.82	263.05	258.65	257.17	256.67	255.40	254.27
29	255.50		260.40	261.25	261.70	265.72	263.12	258.57	257.07	256.75	255.40	255.50
30	255.45		260.35	262.52	261.85	265.52	262.97	258.60	256.97	256.62	255.35	255.57
31	255.40		260.30		262.36		262.70	258.85		256.70		255.48

Missouri River.—Kansas City, Mo., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					314.6	319.1	321.7	.....	.....	309.7	308.7	308.7
2					314.7	320.1	321.9	.....	.....	309.7	308.7	308.7
3					314.6	320.5	322.2	.....	.....	309.7	308.7	308.6
4					314.8	320.6	322.4	.....	.....	309.8	308.6	308.5
5					315.1	320.9	322.7	.....	.....	309.5	308.6	306.5
6					315.0	321.8	.....	.....	.....	309.5	308.5	305.8
7					314.9	321.4	.....	.....	.....	309.5	308.5	305.8
8					314.9	320.9	.....	.....	.....	309.3	308.5	307.6
9					315.6	320.7	.....	.....	.....	309.3	308.5	306.4
10					315.4	321.0	.....	.....	.....	309.3	308.5	306.4
11					314.8	321.4	.....	.....	.....	309.2	308.5	307.1
12					314.5	321.4	.....	.....	.....	309.2	308.4	307.4
13					314.3	320.8	.....	.....	.....	309.1	308.4	308.5
14					314.2	321.1	.....	.....	.....	309.1	308.4	308.0
15					313.8	320.9	.....	.....	.....	309.0	308.4	307.5
16					313.6	320.8	.....	.....	.....	309.0	308.4	307.0
17					313.5	320.5	.....	.....	.....	309.0	308.3	306.8
18					313.5	320.4	.....	.....	.....	309.0	308.3	306.8
19					313.8	320.5	.....	.....	.....	309.0	308.3	306.9
20					313.8	320.7	.....	.....	.....	309.0	308.1	306.9
21				314.5	315.6	320.7	.....	.....	.....	309.0	308.1	306.9
22				314.4	316.8	320.7	.....	.....	.....	309.0	308.3	306.7
23				314.7	317.1	320.6	.....	.....	.....	309.0	308.4	306.5
24				314.3	316.8	321.4	.....	.....	.....	309.0	308.5	306.5
25				315.2	317.6	322.7	.....	.....	.....	308.9	308.8	306.7
26				314.5	318.0	322.2	.....	.....	.....	308.9	309.0	306.9
27				314.7	318.6	321.9	.....	.....	.....	308.9	309.2	307.2
28				314.6	319.6	321.8	.....	.....	.....	308.9	309.2	307.0
29				314.3	319.3	321.4	.....	.....	.....	308.8	309.0	307.0
30				314.2	318.7	321.4	.....	.....	.....	308.8	308.9	306.2
31					318.6	.....	.....	.....	.....	308.7	.....	306.5

Missouri River.—Kansas City, Mo., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	306.7	309.2	308.6	312.3	311.2	311.1	316.4	311.6	310.0	308.5	....	305.6
2	307.7	308.7	309.2	312.3	311.3	311.0	316.6	311.2	309.8	308.5	....	305.3
3	307.5	308.5	310.0	311.5	311.3	310.8	316.4	311.1	309.6	308.4	....	305.4
4	307.5	308.5	311.7	311.3	311.2	310.7	316.4	311.0	309.3	308.4	....	305.8
5	307.1	308.1	311.4	311.1	311.0	312.4	316.2	310.8	309.1	308.2	....	306.1
6	303.7	307.5	311.3	311.0	310.7	314.3	316.5	310.7	309.0	308.2	....	306.2
7	304.3	307.2	311.1	310.7	310.5	315.8	316.9	310.6	308.9	308.0	....	306.2
8	305.4	307.2	311.0	310.4	310.2	317.0	317.0	310.5	308.9	308.0	308.5	306.3
9	306.0	307.1	310.9	310.3	310.2	317.9	317.3	310.4	308.7	307.9	308.5	306.5
10	306.9	307.1	311.0	310.2	310.2	318.0	316.8	310.2	308.6	307.9	308.2	306.6
11	307.1	307.3	311.0	310.0	310.7	317.8	316.0	310.2	308.6	307.8	308.0	306.7
12	306.8	307.5	310.7	309.9	311.1	317.8	315.1	310.1	308.7	307.7	307.9	306.8
13	307.0	308.0	310.7	309.8	311.0	317.9	314.5	310.0	....	307.7	307.9	306.9
14	305.6	308.0	310.5	309.8	310.5	318.5	314.2	310.0	....	307.7	307.9	306.9
15	305.3	308.0	310.1	309.8	310.3	318.5	313.8	310.2	....	307.7	307.9	306.8
16	305.3	308.0	310.0	309.8	310.2	319.1	313.5	310.2	....	307.7	307.9	307.1
17	305.6	308.5	309.8	309.7	310.4	319.6	313.4	310.0	....	307.7	307.9	306.9
18	305.8	308.6	309.7	309.5	310.2	319.6	313.1	309.9	....	307.7	307.9	306.7
19	306.3	309.3	311.3	309.5	310.2	319.6	313.0	309.8	....	307.6	307.9	306.7
20	306.4	309.2	312.0	310.2	310.2	319.4	313.0	309.6	309.3	307.6	308.0	306.7
21	306.7	309.5	312.8	310.5	310.4	319.1	312.9	309.5	309.3	307.7	308.0	306.7
22	308.1	309.6	....	310.6	310.7	318.7	312.9	309.3	309.4	307.8	307.4	306.2
23	308.2	309.7	....	310.7	310.7	318.1	312.9	309.2	309.4	307.8	307.3	305.5
24	307.8	309.2	....	312.7	312.2	317.6	312.9	309.0	309.3	307.7	307.1	305.5
25	308.1	308.7	....	312.9	312.7	317.1	312.9	308.9	309.2	....	307.1	305.5
26	307.0	308.1	....	312.5	312.4	316.9	312.7	309.6	309.0	....	307.1	305.4
27	307.2	308.1	....	312.0	312.0	316.7	312.5	311.6	308.9	....	305.9	305.3
28	307.8	308.0	....	311.6	311.7	316.7	312.4	311.7	308.9	....	305.8	305.4
29	308.9	....	312.4	311.3	311.5	316.5	312.2	311.3	308.9	....	305.6	305.5
30	309.4	....	312.2	311.2	311.4	316.4	312.0	310.6	308.9	....	305.5	305.6
31	309.3	....	312.4	....	311.4	....	311.8	310.2	....	....	....	305.7

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	305.76	306.82	307.23	313.76	321.11	314.17	319.97	316.62	314.41	312.62	309.68	305.67
2	305.44	306.90	307.55	313.27	320.46	315.23	319.31	316.62	314.41	312.38	309.68	305.84
3	305.52	306.74	307.72	312.62	319.48	316.62	318.90	316.37	314.66	312.13	309.68	305.92
4	305.76	307.06	307.88	311.96	319.07	317.60	318.90	316.05	315.07	312.04	309.68	305.84
5	305.92	307.23	308.21	311.80	318.75	318.17	318.99	315.72	315.23	311.96	309.60	306.41
6	306.08	307.23	308.21	311.64	318.01	317.77	319.73	315.72	315.56	311.96	309.60	307.23
7	306.25	307.06	308.04	313.19	317.44	317.92	319.54	315.23	317.52	311.80	309.60	307.39
8	306.41	306.99	308.21	314.00	317.03	318.09	319.80	314.90	317.52	311.80	309.51	307.64
9	306.57	306.90	308.37	314.34	316.86	318.09	319.64	314.50	317.03	311.64	309.44	307.88
10	306.74	306.82	308.53	314.90	316.37	317.77	319.48	314.25	317.28	311.47	309.44	307.97
11	306.90	306.74	308.70	315.15	316.05	317.52	319.40	314.00	316.54	311.31	309.44	307.72
12	306.99	306.74	308.70	315.56	315.64	317.35	319.48	314.00	316.21	311.15	309.35	307.72
13	307.14	306.74	307.72	315.72	315.23	317.19	319.88	313.93	316.05	310.98	309.35	307.55
14	307.14	306.74	306.74	315.56	314.90	316.79	319.97	313.85	315.39	310.82	309.44	307.31
15	307.23	306.82	306.99	315.32	314.98	316.46	319.80	313.76	315.23	310.82	309.44	307.14
16	307.31	306.82	307.48	315.07	314.83	316.05	319.48	313.52	315.15	310.66	309.44	307.31
17	307.39	306.82	307.55	316.70	314.58	315.64	318.75	313.36	315.15	310.58	309.44	307.31
18	307.39	306.74	307.72	316.70	314.41	315.32	318.50	313.11	315.07	310.49	309.35	307.48
19	307.48	306.74	307.64	315.96	314.58	316.05	318.17	312.78	315.15	310.42	309.19	307.06
20	307.55	306.57	307.48	315.32	314.58	316.62	318.01	312.62	315.15	310.33	309.02	306.99
21	307.72	306.57	307.72	314.90	314.50	317.60	317.52	312.45	314.66	310.17	308.95	306.74
22	307.88	306.41	308.12	314.83	314.17	318.50	317.03	312.38	314.41	310.08	308.78	308.12
23	307.80	306.25	308.70	315.32	314.25	318.58	316.70	312.13	314.17	310.00	308.46	308.04
24	307.80	306.33	308.53	317.03	314.41	318.58	316.37	312.04	313.93	309.84	308.04	307.72
25	307.72	306.50	308.37	318.33	314.25	319.15	316.37	311.89	313.85	309.93	306.90	306.82
26	307.55	306.57	308.53	319.15	314.09	319.88	316.37	312.13	313.60	309.93	306.16	307.64
27	307.31	306.66	308.95	319.97	314.17	320.29	316.54	312.38	313.43	309.76	305.84	307.80
28	307.06	307.06	309.68	320.54	314.25	320.62	316.79	312.87	313.27	309.68	305.84	308.04
29	306.90		310.91	321.03	314.34	320.95	316.54	313.68	313.02	309.68	305.76	308.21
30	306.74		310.98	321.27	314.25	320.46	316.46	314.41	312.78	309.68	305.59	308.37
31	306.74		312.21		314.25		316.62	314.41		309.68		308.62

Missouri River.—Kansas City, Mo., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	308.86	308.21	308.04	314.83	314.58	315.23	319.73	314.50	312.38	312.45	310.66	307.06
2	309.27	308.21	307.72	315.32	314.50	314.98	319.80	314.34	312.38	312.38	310.91	306.90
3	309.60	308.12	307.64	315.88	314.17	315.48	319.80	313.93	312.45	312.29	311.15	306.74
4	309.27	308.21	307.55	315.81	314.09	316.30	319.88	313.76	312.45	312.13	311.31	306.57
5	309.10	308.37	307.64	315.72	315.39	316.79	320.22	313.76	312.62	311.80	311.15	306.41
6	308.53	308.21	307.64	315.72	317.60	316.21	319.80	313.93	312.94	311.64	310.98	306.25
7	308.78	308.21	307.55	316.21	318.33	316.62	319.40	314.09	313.36	311.47	310.82	306.08
8	308.46	308.04	308.46	316.37	318.90	317.52	319.15	313.93	313.60	311.31	310.66	305.92
9	308.46	308.04	309.51	316.05	317.92	317.84	319.24	313.76	313.93	311.15	310.49	305.76
10	307.55	308.12	310.49	315.88	317.44	317.68	319.07	313.68	314.09	311.06	310.33	306.00
11	308.37	308.04	310.33	315.88	317.03	318.33	318.90	313.68	314.41	310.98	310.25	306.25
12	308.21	308.12	310.33	316.30	316.05	319.40	318.75	313.76	314.58	310.82	310.08	306.50
13	307.48	308.21	310.42	317.35	314.98	319.64	318.50	313.60	314.90	310.66	309.93	306.74
14	306.25	308.04	310.49	317.84	314.25	320.86	318.17	313.52	315.07	310.58	309.76	306.99
15	306.16	307.88	310.49	319.64	313.85	320.46	317.84	313.85	315.23	310.49	309.68	307.23
16	306.90	307.88	311.23	320.71	313.27	321.44	317.68	314.09	315.32	310.42	309.60	307.48
17	308.46	307.88	311.31	320.86	313.19	320.38	317.52	314.34	315.23	310.33	309.51	307.72
18	308.46	307.80	312.29	319.97	313.02	319.73	317.11	314.58	315.07	310.25	309.44	308.04
19	308.46	307.72	312.29	318.99	313.36	319.56	317.03	314.74	314.98	310.17	309.27	308.37
20	308.53	307.80	312.13	318.42	313.43	319.73	317.03	314.58	314.58	310.08	309.10	308.70
21	308.53	307.80	311.80	317.60	313.02	319.73	316.94	314.90	314.09	310.08	308.95	309.02
22	308.95	307.88	311.15	316.94	312.87	320.05	316.79	315.23	313.93	310.08	308.70	309.27
23	308.70	308.04	310.98	318.33	312.62	319.97	316.54	315.56	313.76	310.08	308.46	309.51
24	308.29	308.04	310.91	318.33	312.54	319.73	316.05	315.88	313.60	310.08	308.29	309.19
25	308.21	308.21	310.66	318.26	312.38	319.07	315.81	315.23	313.43	310.25	308.12	308.95
26	308.21	308.29	310.98	316.94	312.38	318.42	315.64	314.74	313.27	310.42	307.97	308.95
27	308.04	308.29	311.31	316.54	312.78	317.60	315.56	314.17	313.02	310.58	307.80	308.70
28	308.04	307.80	311.96	316.21	313.02	319.31	315.56	313.60	312.78	310.66	307.64	308.53
29	307.88	308.21	313.60	315.48	314.83	319.64	315.48	312.62	312.70	310.66	307.39	308.53
30	307.97		314.25	315.15	314.98	319.64	315.23	312.54	312.54	310.58	307.23	308.46
31	308.21		314.58	315.23	315.23		314.90	312.29		310.42		308.70

Missouri River.—Kansas City, Mo., 1877.

Day.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	308.95	309.51	311.56	313.11	316.94	322.09	322.91	315.15	310.91	308.62	309.27	309.10
2	309.27	309.68	311.40	313.43	316.54	322.09	322.91	314.98	310.66	308.53	309.19	309.10
3	309.51	309.84	311.23	313.93	315.96	322.25	322.82	314.98	310.49	308.46	309.19	309.02
4	309.76	310.33	310.98	313.52	315.72	322.18	322.67	314.83	310.42	308.29	309.19	308.86
5	310.08	311.06	310.66	313.27	315.15	321.44	322.42	314.58	310.25	308.29	309.27	308.70
6	310.25	311.64	310.08	313.68	314.90	320.95	321.33	314.58	310.17	308.21	309.27	308.29
7	310.00	312.21	309.00	310.02	314.58	321.03	321.44	314.25	309.93	308.21	309.19	308.04
8	309.68	311.72	309.02	318.33	314.66	323.23	321.03	314.17	309.84	308.12	309.10	307.72
9	309.44	311.15	308.37	319.07	314.74	324.46	320.95	314.25	309.93	307.97	309.10	307.72
10	309.02	310.58	308.29	318.75	314.66	325.61	321.11	314.34	310.17	308.04	309.02	307.64
11	308.95	310.58	308.62	317.35	314.83	325.44	321.03	314.34	310.08	308.21	308.95	307.64
12	309.27	310.58	309.10	316.62	315.32	324.60	320.46	313.85	310.00	308.62	308.95	307.72
13	309.19	310.58	309.44	316.05	316.21	324.38	319.48	313.43	309.93	308.46	308.78	307.88
14	309.19	310.58	309.60	315.48	315.96	324.38	318.50	313.27	309.93	308.37	308.95	307.80
15	309.19	310.49	309.76	315.23	315.88	324.11	318.42	312.94	309.68	308.29	308.95	307.72
16	309.02	310.49	309.93	315.39	316.62	323.80	318.66	312.62	309.60	308.70	308.86	307.72
17	308.95	310.49	310.17	315.15	318.01	323.40	319.15	312.13	309.60	308.78	309.35	307.55
18	308.86	310.58	310.33	315.32	318.75	322.25	318.99	311.89	309.51	308.86	309.27	307.72
19	308.70	310.66	310.58	316.94	318.09	321.60	319.40	311.89	309.27	309.10	309.35	308.12
20	308.70	310.91	310.91	317.44	318.50	321.11	319.24	311.80	309.27	309.19	309.51	308.62
21	308.70	311.23	311.06	317.35	320.78	321.03	319.15	311.96	309.19	309.68	309.35	309.19
22	308.70	311.47	311.15	316.86	321.52	320.62	318.82	312.29	309.10	310.74	309.44	309.68
23	308.70	311.89	311.31	317.28	321.44	320.22	318.50	312.29	309.10	310.98	309.35	309.93
24	308.62	312.21	311.56	317.52	321.03	320.38	318.99	312.04	309.10	310.82	309.35	310.08
25	308.53	311.96	311.64	317.03	320.62	321.03	318.58	311.89	309.02	310.98	309.27	310.17
26	308.53	311.80	311.80	316.37	320.05	322.18	318.01	311.64	308.95	311.15	309.27	310.25
27	308.46	311.72	312.13	316.13	319.56	322.34	317.11	311.40	308.95	311.23	309.19	310.42
28	308.53	311.64	312.38	315.96	319.15	322.18	316.79	311.06	308.95	311.31	309.51	310.66
29	308.70		312.54	316.54	320.62	322.09	316.30	310.98	308.86	311.40	309.51	311.15
30	308.95		312.78	316.62	321.20	322.42	315.88	310.82	308.78	309.68	309.19	310.82
31	309.19		312.94		321.44		315.56	310.91		309.35		310.33

Missouri River.—Kansas City, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	309.93	310.58	310.98	312.78	318.01	320.86	322.91	319.88	312.17	310.21	309.02	309.51
2	309.60	310.42	311.06	312.54	318.01	320.71	323.23	319.48	312.08	310.17	309.10	309.51
3	309.27	310.08	310.91	312.21	318.09	320.62	323.16	318.99	311.93	310.08	309.19	309.44
4	309.02	309.84	310.66	312.04	318.26	320.46	322.82	318.66	311.76	310.08	309.19	309.35
5	308.86	309.60	310.42	311.96	318.09	320.71	322.58	318.26	311.60	310.08	309.10	309.35
6	308.70	309.27	310.33	311.89	317.84	321.44	322.42	317.92	311.44	310.04	309.10	309.35
7	308.37	309.19	310.25	311.64	317.52	322.18	322.34	317.52	311.40	309.97	309.19	309.27
8	308.12	309.68	310.25	311.89	317.03	322.42	322.18	317.03	311.40	309.80	309.14	309.27
9	307.80	310.08	310.42	311.96	316.54	322.74	321.93	316.94	311.56	309.76	309.10	309.27
10	307.48	310.33	310.42	312.21	315.96	322.91	321.69	316.94	311.56	309.64	309.10	309.19
11	307.31	310.58	310.33	312.38	315.39	322.74	321.60	316.86	311.84	309.60	309.10	309.10
12	307.23	310.82	310.42	312.54	315.07	322.42	321.93	316.70	312.21	309.55	309.14	309.10
13	307.23	310.91	310.33	312.54	314.58	322.82	322.25	316.54	312.04	309.48	309.24	309.02
14	307.39	310.98	310.42	312.45	314.34	322.58	321.60	316.54	311.72	309.40	309.31	308.86
15	307.55	311.40	310.49	312.38	314.00	321.69	320.78	316.13	311.60	309.31	309.40	309.35
16	307.72	311.64	310.58	312.21	313.76	320.95	320.46	315.88	311.44	309.19	309.44	311.84
17	307.72	311.47	310.49	312.13	313.68	320.62	319.88	315.39	311.27	309.35	309.48	312.29
18	307.88	311.15	310.49	312.04	313.76	320.38	319.73	314.98	311.11	309.27	309.55	311.72
19	308.04	310.98	310.42	312.13	313.85	320.29	319.73	314.58	310.94	309.24	309.64	311.10
20	308.46	310.91	310.17	312.38	314.00	320.29	319.73	314.34	310.78	309.14	309.68	309.68
21	308.86	311.40	310.00	312.38	314.25	321.44	319.48	314.17	310.62	309.10	309.68	309.68
22	309.27	311.89	309.84	312.49	314.58	321.76	319.24	314.00	310.58	309.10	309.64	309.44
23	309.68	312.29	309.68	312.62	314.34	321.93	318.50	313.93	310.58	309.10	309.55	309.35
24	309.84	311.64	309.68	312.87	314.17	322.25	318.01	313.76	310.54	309.10	309.51	309.35
25	309.68	311.15	309.51	313.02	314.09	322.42	319.15	313.60	310.49	309.10	309.51	309.23
26	309.44	311.15	309.44	313.60	315.07	322.50	319.48	313.36	310.62	309.10	309.60	309.19
27	309.93	311.06	309.44	315.81	319.07	322.58	321.52	313.02	310.74	309.10	309.55	309.19
28	310.19	310.98	309.35	317.03	319.48	322.82	321.76	312.70	310.66	309.02	309.48	309.14
29	310.66		309.44	317.92	320.46	322.50	321.93	312.62	310.54	309.02	309.44	309.10
30	311.06		309.60	317.92	321.20	322.74	321.27	312.45	310.37	309.02	309.44	309.10
31	310.82		310.00		321.44		320.46	312.29		309.02		309.06

Missouri River.—Kansas City, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	308.99	310.88	306.54	312.54	312.54	315.92	322.05	316.71	310.80	308.70	307.92	309.72
2	308.95	310.75	306.88	312.42	312.42	315.80	321.92	316.75	310.80	308.70	307.92	309.72
3	308.95	310.63	307.25	313.21	312.83	315.92	321.17	317.00	310.80	308.70	307.92	309.52
4	308.86	310.59	307.59	313.55	313.46	316.50	321.38	316.92	310.80	308.61	307.92	309.32
5	309.71	310.84	307.71	312.96	313.42	316.96	320.96	316.42	310.60	308.47	307.92	309.47
6	309.71	310.88	309.01	313.47	313.38	316.92	320.59	316.13	310.00	308.42	307.92	310.72
7	309.71	310.75	308.50	316.42	313.75	316.75	320.46	315.67	310.00	308.42	307.92	311.42
8	309.67	310.50	308.17	318.30	313.55	316.55	320.42	315.05	310.00	308.42	308.07	311.27
9	309.63	309.75	308.46	319.17	313.34	316.92	320.17	314.54	309.90	308.32	308.67	310.82
10	309.55	311.26	309.47	319.67	313.30	317.09	319.54	313.46	309.80	308.32	308.87	310.22
11	309.46	310.80	310.88	319.96	313.26	316.88	319.17	314.00	309.75	308.42	309.22	309.92
12	309.46	308.29	310.63	319.30	313.46	316.67	319.00	313.84	309.80	308.42	311.57	309.22
13	309.46	307.92	310.30	317.51	313.46	316.55	318.92	313.46	309.80	308.42	313.37	307.71
14	309.46	307.75	310.80	316.42	313.38	316.58	318.46	313.26	309.65	308.32	314.52	307.05
15	309.46	307.55	311.26	315.92	313.38	316.71	317.92	312.96	309.50	308.22	313.77	.....
16	309.50	307.58	311.00	315.21	313.38	318.13	317.67	312.71	309.45	308.32	313.37	.....
17	309.55	307.71	310.75	314.88	313.30	318.80	317.67	312.50	309.35	308.62	312.77	.....
18	309.55	307.42	310.38	314.34	313.63	319.47	317.38	312.34	309.30	308.92	312.07	.....
19	309.63	307.38	310.05	313.92	313.80	319.96	317.26	312.26	309.25	308.87	311.77	.....
20	309.63	307.26	309.84	313.63	313.75	319.96	317.09	312.09	309.15	308.72	311.37	.....
21	309.55	307.13	309.46	313.42	313.66	319.71	316.96	311.92	308.95	308.47	310.77	.....
22	309.55	307.21	309.17	313.26	313.66	318.96	317.00	311.75	308.90	308.27	310.57	.....
23	309.55	307.30	309.30	313.09	313.66	318.63	317.34	311.59	308.80	308.07	310.32	.....
24	309.46	307.26	309.58	313.13	313.84	319.26	317.17	311.42	308.80	308.02	310.02	.....
25	309.38	307.18	309.34	313.09	313.96	320.17	316.71	311.26	308.70	308.02	309.97	.....
26	309.42	306.92	308.88	313.00	314.38	320.67	316.75	311.13	308.60	308.02	309.67	.....
27	309.59	306.75	308.71	312.92	314.42	321.71	316.67	311.13	308.60	308.02	309.72	.....
28	309.75	306.50	310.59	312.75	314.26	321.84	316.30	311.09	308.60	308.02	310.22	.....
29	310.05		312.38	312.71	314.22	322.26	316.30	311.05	308.60	307.97	310.07	.....
30	310.72		312.96	312.63	314.63	322.42	316.34	311.00	308.60	307.92	309.92	.....
31	310.88		312.96		315.71		316.67	310.92				.....

Missouri River.—Kansas City, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	307.17	310.02	309.62	310.62	312.42	318.02	315.42	314.77	310.52	308.82	305.17
2	.....	306.52	309.32	309.47	310.62	312.42	318.52	315.42	313.67	310.52	308.72	305.27
3	.....	306.22	308.42	310.27	310.67	312.37	319.07	315.32	314.37	311.22	308.72	305.47
4	300.96	306.52	307.57	310.62	310.82	312.87	319.22	315.32	314.82	310.82	308.77	305.67
5	310.63	306.72	307.17	310.47	310.92	313.57	319.22	315.22	315.47	310.42	308.82	305.82
6	309.71	306.62	307.97	311.17	310.52	314.57	319.07	315.17	315.72	310.12	308.72	305.87
7	309.38	306.62	308.67	315.92	310.37	315.12	319.22	315.07	314.92	310.07	308.82	306.07
8	309.38	306.92	308.77	317.12	310.27	314.87	319.62	315.02	314.12	309.72	308.82	306.57
9	309.27	307.17	308.72	315.97	310.17	314.37	319.97	314.92	313.47	309.57	308.92	307.27
10	309.00	307.37	308.62	314.92	310.37	314.52	320.12	314.92	313.12	309.67	309.12	307.72
11	308.71	307.37	308.57	314.27	310.32	314.37	319.92	314.77	312.87	309.47	309.22	307.67
12	308.46	308.42	308.72	313.62	310.22	314.17	320.02	314.67	312.57	309.37	309.17	307.57
13	308.71	309.02	308.92	313.02	310.22	314.02	320.02	314.22	312.37	309.42	309.22	307.42
14	308.54	308.92	308.72	312.37	310.22	314.22	319.92	313.87	312.17	309.77	309.12	306.97
15	308.13	308.57	308.47	312.22	310.22	314.52	320.02	313.27	311.97	310.12	309.02	306.82
16	307.96	308.17	307.42	311.97	310.22	314.62	319.87	313.17	311.77	309.72	308.97	306.57
17	307.50	308.22	306.57	311.77	310.22	316.27	319.62	313.07	311.57	311.02	308.97	306.72
18	307.72	308.42	306.22	311.27	310.12	316.62	319.37	312.82	311.37	310.62	308.92	306.42
19	307.72	308.67	306.17	310.97	310.12	316.67	319.47	312.47	311.32	310.17	308.42	306.72
20	307.82	309.17	306.52	310.72	310.02	316.67	319.37	312.42	311.27	310.12	307.12	307.02
21	307.92	308.67	307.02	310.52	310.02	316.87	319.22	312.42	311.12	310.02	306.47	307.17
22	308.02	308.42	307.07	310.57	310.02	318.07	319.37	312.42	311.17	309.87	305.22	307.32
23	308.12	308.22	306.87	310.62	309.97	318.17	319.27	312.42	310.92	309.57	305.22	307.67
24	307.97	308.22	307.17	311.87	310.12	317.82	318.47	312.67	310.77	309.32	305.22	307.82
25	307.77	308.47	308.92	312.47	310.32	317.32	317.47	313.47	310.57	309.17	305.02	307.97
26	307.67	308.72	310.52	312.17	310.77	316.97	316.87	313.27	310.72	309.12	305.12	308.02
27	307.67	309.47	311.02	311.67	311.72	316.92	316.37	312.97	310.77	309.07	305.47	308.12
28	307.72	310.27	311.42	311.27	312.37	317.37	315.97	313.02	311.07	309.12	305.12	308.57
29	307.82	310.32	310.97	310.02	313.07	317.52	315.67	313.57	311.07	309.07	305.12	308.72
30	308.12		310.37	310.67	313.12	317.62	315.47	314.07	310.77	309.07	305.17	.....
31	307.97		310.02		312.92		315.47	314.82		309.12		.....

Missouri River.—Kansas City, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1			311.37	322.02	330.42	319.77	320.57	314.07	310.22	309.52	311.22	309.32
2			311.12	321.67	329.57	320.62	320.87	314.02	310.02	309.67	311.22	308.82
3			311.82	320.27	328.02	320.57	320.67	313.92	310.12	309.47	311.32	308.82
4			312.92	320.92	325.52	320.27	319.82	313.82	309.97	309.72	311.32	308.62
5			312.12	321.62	322.37	319.97	319.22	313.72	309.92	309.67	311.37	308.42
6		310.47	312.22	322.02	320.97	319.72	318.62	313.57	309.82	309.62	311.17	308.22
7		315.27	312.12	322.32	319.07	319.32	317.92	313.42	309.82	309.72	311.12	308.27
8		314.52	312.12	322.47	319.27	319.12	317.12	313.27	309.87	309.82	311.27	308.27
9		313.37	312.07	322.87	319.02	319.17	316.57	.....	310.02	309.82	311.22	308.22
10		311.97	311.67	324.22	318.97	319.37	316.77	.....	310.12	309.67	311.37	308.22
11		311.57	313.67	324.02	318.82	320.22	317.02	312.32	310.47	309.67	312.12	308.12
12		310.87	315.27	324.92	318.27	319.62	317.37	312.47	311.22	309.82	312.82	308.12
13		310.12	315.57	325.47	318.22	319.62	317.72	312.17	311.37	310.27	.....	308.32
14		309.77	315.82	325.37	318.27	319.77	317.82	312.32	310.87	310.47	312.77	308.12
15		309.57	317.42	323.82	318.42	320.02	317.82	312.22	310.72	311.22	311.92	308.02
16		309.22	319.17	322.12	318.42	321.07	317.52	311.92	310.62	310.62	311.37	308.02
17		308.82	318.62	321.57	318.37	321.92	317.22	311.72	310.62	311.47	311.22	308.07
18		308.42	318.77	321.52	318.17	321.82	316.92	311.67	310.57	312.17	311.07	308.22
19		308.17	318.12	322.02	317.82	321.07	316.42	311.57	310.72	311.97	310.82	308.32
20		307.97	317.57	323.17	317.87	320.22	315.92	311.37	310.62	311.77	310.67	308.12
21		307.77	317.32	324.12	318.97	319.92	315.77	311.07	310.57	311.37	310.62	308.22
22		307.87	316.97	324.62	319.77	319.52	315.82	310.92	310.27	311.12	.....	308.32
23		308.02	316.42	325.32	319.97	319.22	315.67	310.77	309.97	311.02	.....	308.42
24		308.02	316.27	325.92	319.32	319.32	315.37	310.57	309.72	310.82	.....	308.32
25		308.02	316.47	326.52	318.62	319.72	315.02	310.42	309.57	310.77	.....	308.92
26		308.92	316.72	327.02	317.97	319.52	314.77	310.27	309.27	310.62	.....	308.92
27		311.22	317.27	327.82	317.42	319.27	314.67	310.17	309.37	310.62	.....	308.97
28		312.17	317.27	329.17	317.22	319.72	314.47	310.07	309.27	310.62	.....	308.77
29			321.02	330.52	317.02	320.27	314.37	310.02	309.12	310.52	309.02	308.77
30			322.17	330.72	317.12	320.02	314.22	310.17	309.67	310.77	309.17	308.57
31			321.72	.....	318.42	.....	314.17	310.07	.....	310.87	.....	308.52

Missouri River.—Kansas City, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	305.72	307.22	308.72	312.32	316.37	322.87	315.82	309.62	307.32	308.07	306.47
2	.....	305.92	308.67	308.72	313.02	315.77	322.92	316.27	309.62	307.27	308.02	306.37
3	.....	306.32	309.77	309.02	313.52	315.47	323.37	316.02	309.52	307.22	307.92	306.22
4	.....	306.37	310.42	309.72	313.22	314.92	323.17	315.27	309.42	307.22	307.82	306.17
5	.....	306.82	310.52	309.92	312.72	314.67	322.62	314.67	309.37	307.32	307.97	306.12
6	.....	306.67	310.72	309.72	312.37	314.32	321.87	314.27	309.27	307.37	307.82	305.87
7	.....	306.97	311.37	309.82	312.22	314.07	321.17	314.07	309.17	307.32	307.82	305.67
8	.....	308.12	311.77	310.52	312.12	313.87	320.52	313.87	309.02	307.42	307.82	304.72
9	305.82	307.22	311.47	.....	312.12	313.67	319.92	313.62	308.97	307.42	307.82	304.87
10	306.02	307.07	311.42	313.07	312.27	313.72	319.42	313.52	308.87	307.57	307.72	304.92
11	306.17	307.02	309.22	314.62	312.37	313.72	318.82	313.32	308.77	307.57	307.67	304.92
12	306.42	307.32	308.67	316.37	312.52	313.77	318.52	313.12	308.62	307.87	307.77	304.92
13	306.62	307.82	308.72	318.72	312.52	314.37	318.47	312.92	308.47	308.02	307.72	304.92
14	306.72	309.22	308.82	318.62	312.67	316.62	318.62	312.47	308.22	308.92	307.92	304.92
15	306.77	309.37	308.97	317.47	312.87	317.17	318.52	312.17	308.32	309.22	308.17	304.92
16	307.02	309.12	309.07	316.47	314.27	317.12	318.87	311.97	308.17	309.32	308.37	304.92
17	307.32	308.92	308.72	315.72	314.47	317.17	319.12	311.62	308.07	309.07	308.32	304.92
18	.....	308.52	308.87	315.12	314.17	317.57	319.32	311.37	307.97	308.92	308.27	304.92
19	.....	308.67	309.67	314.82	313.82	319.02	319.02	311.22	308.12	308.87	308.07	305.37
20	.....	308.67	310.12	314.52	313.47	320.02	318.47	310.97	308.07	308.77	307.92	305.42
21	.....	307.97	310.12	314.17	313.62	320.62	317.82	310.82	307.97	308.52	307.77	305.42
22	.....	306.22	309.62	314.07	315.12	321.02	317.47	310.67	307.87	308.32	307.67	305.07
23	306.97	306.02	309.37	314.22	315.32	320.72	316.87	310.52	307.67	308.32	307.62	304.97
24	306.67	304.62	308.77	314.02	314.92	320.57	316.37	310.27	307.47	308.22	307.62	304.92
25	307.47	304.72	308.47	313.52	314.72	320.77	315.97	310.17	307.42	308.32	307.52	304.92
26	306.62	.....	308.77	313.17	314.77	321.07	315.77	310.07	307.37	308.42	307.42	304.92
27	306.27	305.37	308.82	313.17	315.12	321.52	315.37	309.97	307.27	308.52	307.32	304.92
28	306.17	306.07	308.82	313.27	315.52	322.07	315.12	309.87	307.22	308.77	307.07	304.82
29	306.97	.....	308.97	312.92	315.92	322.22	314.77	309.82	307.32	308.67	306.82	304.92
30	.....	.....	309.02	312.52	316.47	322.77	315.22	309.77	307.32	308.37	306.62	305.12
31	.....	.....	308.72	.....	316.72	.....	315.17	309.67	.....	308.17	.....	305.22

Missouri River.—Kansas City, Mo., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	305.20	310.20	310.70	313.15	312.90	318.30	325.60	316.00	311.85	308.95	310.35	307.55
2	305.35	310.20	310.70	313.00	312.80	318.15	324.85	315.45	311.65	309.25	310.15	307.30
3	308.70	310.00	310.70	313.05	312.70	318.60	323.40	315.10	311.45	308.95	310.00	307.05
4	308.60	309.60	311.30	313.30	312.85	319.65	322.45	315.05	311.25	309.20	309.85	306.90
5	308.60	309.20	312.00	313.45	312.75	320.75	321.90	315.20	311.05	309.40	309.75	306.85
6	309.60	308.95	313.05	313.55	312.30	320.95	321.60	314.90	310.75	309.45	310.00	306.85
7	310.35	308.90	312.55	313.65	312.15	320.25	321.85	314.45	310.50	309.55	310.55	306.80
8	310.70	308.85	311.95	313.60	312.05	320.05	321.65	313.95	310.25	309.60	310.40	306.80
9	310.70	308.80	311.35	313.45	312.00	320.35	321.65	313.85	310.15	309.60	310.20	306.75
10	310.70	308.65	311.25	313.40	312.15	320.65	321.65	313.90	309.95	309.45	310.15	306.90
11	310.70	308.55	312.30	313.10	312.45	320.35	321.90	314.00	309.85	309.25	310.00	307.00
12	310.70	308.50	313.30	313.10	312.85	321.25	323.05	313.85	309.70	308.95	309.70	307.15
13	310.70	308.50	312.70	312.95	313.85	322.05	322.80	313.75	309.45	308.90	309.55	307.25
14	310.70	310.00	312.35	313.05	314.60	322.10	322.50	313.85	309.25	309.00	309.40	307.45
15	310.50	318.52	312.85	313.60	315.25	322.15	322.20	313.95	309.20	308.85	309.35	307.50
16	310.50	310.95	313.15	314.10	315.85	322.00	321.60	313.90	309.20	308.55	309.15	307.55
17	310.50	310.05	313.45	314.55	316.97	323.05	320.75	313.95	309.10	308.60	308.90	307.40
18	310.50	311.20	313.15	316.00	317.75	324.90	320.10	313.95	309.05	308.90	308.55	307.25
19	310.50	311.20	313.20	316.50	318.60	325.80	319.45	314.30	309.00	309.15	308.30	307.30
20	310.50	311.15	313.40	318.00	318.95	326.45	318.65	315.60	308.95	309.95	308.10	306.25
21	310.15	310.45	313.60	317.70	318.35	326.25	318.25	315.30	308.75	310.20	308.10	305.70
22	310.10	309.80	312.95	316.35	317.90	326.25	317.80	315.00	308.65	310.05	307.95	305.20
23	310.10	309.45	312.10	315.35	317.55	325.95	317.35	314.40	308.60	309.80	308.10	305.10
24	310.10	310.05	311.75	314.70	317.27	326.20	317.00	313.95	308.60	309.75	308.45	305.00
25	310.20	311.70	311.70	314.05	318.25	327.05	316.75	313.60	308.70	309.95	308.40	305.15
26	310.20	312.30	312.45	313.75	320.70	327.45	316.50	313.10	308.75	310.80	308.35	305.20
27	310.20	312.00	314.65	313.75	321.05	327.45	316.25	312.95	309.05	310.95	308.30	304.75
28	310.20	311.60	314.90	313.80	320.50	326.95	316.15	312.80	309.10	310.80	308.20	304.05
29	310.20		314.20	313.50	319.65	326.45	315.95	312.55	308.95	310.80	308.05	304.05
30	310.20		313.90	313.05	319.15	326.10	316.80	312.25	308.90	310.80	307.85	304.65
31	310.20		313.40		318.85		316.65	312.05		310.70		304.00

Missouri River.—Kansas City, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	303.17	309.30	307.00	317.50	314.95	316.67	319.62	317.17	312.95	311.60	309.92	307.42
2	303.87	309.15	307.12	317.97	315.95	316.95	319.52	316.87	312.80	311.60	309.90	307.67
3	304.12	308.95	307.17	318.25	316.75	317.22	319.95	316.15	312.55	311.97	309.85	307.90
4	305.42	308.77	307.50	318.47	316.62	317.57	320.62	315.72	312.25	312.10	309.80	307.97
5	305.42	308.85	307.77	319.70	316.90	317.85	320.97	315.27	312.05	311.70	309.75	308.17
6	305.62	308.62	308.02	321.07	317.25	317.80	320.97	314.65	311.80	311.70	309.65	308.50
7	306.32	308.45	308.15	321.62	316.97	317.77	320.77	314.15	312.00	312.15	309.47	308.80
8	306.82	308.50	308.05	321.85	316.67	318.32	320.20	313.85	312.45	312.35	309.40	308.90
9	307.07	308.30	308.35	322.12	317.00	319.32	319.82	313.55	312.55	312.32	309.32	308.82
10	307.37	308.27	308.12	321.75	316.52	319.65	319.57	313.27	312.92	312.32	309.27	308.75
11	307.42	308.42	309.17	320.52	315.72	319.50	319.18	313.02	312.02	312.32	309.25	308.62
12	307.52	308.55	309.85	319.27	315.30	319.17	318.80	312.80	311.32	312.07	309.25	308.50
13	307.72	308.67	309.45	318.47	315.15	319.25	319.37	312.57	311.20	312.05	309.32	308.40
14	307.87	308.97	309.50	317.77	314.90	319.15	319.00	312.50	311.07	312.27	309.42	308.05
15	307.82	308.87	309.20	317.40	315.00	319.15	318.40	312.42	310.97	312.35	309.42	307.20
16	308.17	308.62	309.30	316.85	314.60	319.45	317.82	312.35	310.85	312.10	309.42	306.35
17	308.37	308.45	310.50	316.52	314.50	320.05	317.50	312.27	310.80	311.75	309.45	304.45
18	308.52	308.77	312.30	316.35	314.67	320.90	317.20	312.10	311.05	311.40	309.45	304.32
19	308.52	309.27	312.02	316.55	314.37	321.37	317.10	312.20	311.17	311.12	309.42	304.62
20	308.75	309.75	312.30	317.67	314.20	321.35	316.97	312.32	311.05	311.00	309.40	304.85
21	308.95	309.82	313.52	317.77	313.97	321.35	316.92	312.35	311.12	311.20	309.35	305.00
22	309.00	309.72	313.95	317.65	313.67	321.62	316.77	312.32	311.40	311.17	309.30	305.15
23	308.85	309.60	314.17	317.87	314.02	322.02	316.60	312.32	311.65	310.82	309.35	305.10
24	308.70	309.60	315.07	317.15	314.50	322.30	316.65	312.17	313.12	310.55	309.37	305.05
25	308.60	309.07	319.17	316.25	314.87	322.20	317.07	313.17	311.67	310.27	309.17	305.25
26	308.60	307.82	320.70	315.57	315.35	321.80	317.27	313.10	310.90	310.10	308.62	305.50
27	308.45	307.47	318.90	315.10	315.27	321.40	317.25	312.85	310.95	310.17	308.32	306.10
28	308.25	307.42	318.32	314.72	315.12	320.87	316.90	313.15	313.00	310.10	307.92	306.25
29	308.30	306.77	317.97	314.40	315.00	320.42	316.77	313.12	312.97	310.00	307.45	306.45
30	308.85		317.82	314.50	315.80	319.95	316.80	313.22	311.97	310.00	307.32	306.80
31	309.40		317.60		316.47		316.92	313.12		309.95		307.00

Missouri River.—Kansas City, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	307.15	307.65	311.40	313.95	315.85	316.25	319.75	316.50	313.47	309.55	309.35	308.60
2	307.25	307.60	313.62	314.60	316.12	316.35	319.70	316.30	313.17	309.35	309.45	308.47
3	307.35	307.85	315.82	314.50	315.62	316.40	319.80	315.75	312.90	309.20	309.47	308.42
4	307.40	309.72	317.90	314.35	314.87	316.15	319.65	315.45	313.85	309.02	309.42	308.60
5	307.55	313.25	317.37	314.00	314.35	316.05	319.67	315.20	313.17	308.92	309.48	308.27
6	307.90	318.72	312.25	313.75	314.42	316.85	319.85	315.15	312.62	308.83	309.43	308.62
7	308.20	313.00	312.77	314.00	314.35	317.35	319.87	315.10	312.60	308.80	309.37	308.45
8	308.60	311.72	313.10	314.12	313.97	317.20	319.70	315.17	313.75	308.72	309.15	308.40
9	309.30	311.42	314.05	314.10	313.47	316.95	319.50	315.45	314.35	308.58	308.95	305.65
10	309.85	310.65	314.97	314.05	313.22	316.80	319.23	315.47	313.60	308.50	308.95	305.97
11	310.05	309.85	315.05	313.65	312.97	319.45	319.00	316.50	312.85	308.45	309.10	308.00
12	310.25	309.55	315.67	313.50	312.80	319.97	318.95	316.75	312.55	308.67	309.27	308.92
13	310.20	309.30	315.95	314.00	312.60	320.30	318.72	316.15	312.55	308.75	309.45	308.72
14	310.05	309.15	316.10	314.05	312.50	320.70	318.55	315.40	312.62	308.77	309.50	308.50
15	309.70	309.00	315.95	315.15	312.30	320.70	318.48	314.90	312.72	308.80	309.42	308.20
16	309.35	309.30	316.35	315.35	312.22	321.65	318.20	314.45	312.67	308.87	309.25	308.40
17	309.05	309.95	316.50	314.90	312.52	322.12	317.95	314.00	312.62	308.87	309.05	308.70
18	308.85	310.35	315.92	314.35	313.22	322.55	317.60	313.60	312.60	309.05	309.02	309.17
19	308.70	310.55	315.90	313.60	313.90	322.60	317.30	313.35	312.55	309.40	309.05	309.45
20	308.65	310.67	315.25	312.80	314.75	322.25	316.95	313.15	312.15	309.42	309.10	309.65
21	308.55	310.72	314.70	312.10	314.85	322.10	316.70	312.95	311.62	309.05	309.10	309.85
22	308.50	310.95	314.17	312.10	314.52	321.92	316.42	312.70	311.20	308.87	309.10	310.15
23	308.55	311.12	313.85	312.30	314.25	321.72	316.45	312.55	310.95	308.78	308.97	307.37
24	308.40	311.45	313.55	312.85	314.87	321.42	316.67	312.55	310.82	308.78	308.87	307.12
25	308.35	311.27	313.90	313.75	315.12	321.00	316.90	312.52	310.67	308.82	308.80	307.05
26	308.25	310.55	314.90	314.87	314.97	320.77	317.15	312.67	310.45	308.90	308.77	307.02
27	308.15	309.75	314.55	314.92	314.02	320.75	316.92	312.70	310.12	308.97	308.72	307.37
28	308.00	309.95	314.25	314.75	315.00	320.60	316.97	312.67	310.00	309.15	308.70	308.82
29	307.95		314.20	314.67	315.20	320.40	316.90	312.62	309.85	309.02	308.75	308.85
30	307.85		314.07	315.62	315.57	319.95	316.50	312.90	309.65	309.02	308.67	308.75
31	307.70		313.95		315.85		316.45	313.25		309.35		308.77

Missouri River.—Leavenworth, Kas., 1873.

Day	January.	February.	March.	April.	May.	June.	July	August.	September.	October.	November.	December.
1						341.7	345.7	339.2	336.7	335.1	332.8	332.9
2						342.9	346.0	338.9	337.0	335.1	332.8	332.8
3						342.9	346.3	338.7	336.5	335.0	332.8	332.5
4						342.7	346.5	338.7	336.3	335.0	332.8	331.3
5						343.3	346.6	338.5	336.2	335.0	332.7	329.3
6						343.7	346.6	338.3	336.2	335.0	332.7	329.3
7						343.3	346.5	338.3	336.2	335.0	332.7	329.3
8						342.7	346.1	338.3	335.9	334.9	332.7	329.3
9						342.8	345.4	338.3	335.8	334.9	332.7	328.8
10						343.4	345.2	338.1	335.8	334.9	332.6	328.8
11						344.1	344.7	337.8	335.7	334.8	332.5	329.3
12						344.1	344.2	337.6	335.7	334.8	332.5	329.3
13						344.2	343.7	337.4	335.7	334.8	332.6	329.3
14						344.2	343.2	337.3	335.7	334.8	332.6	329.3
15						344.1	342.8	337.3	335.5	334.8	332.5	329.6
16						344.2	342.6	337.2	335.5	334.8	332.5	329.6
17						344.0	342.3	337.1	335.4	334.8	332.5	329.6
18					337.2	344.2	342.2	337.1	335.3	334.7	332.5	329.7
19					337.1	344.4	342.3	336.9	335.3	334.7	332.3	329.8
20					337.0	344.7	342.0	336.9	335.3	334.7	332.3	329.8
21					338.3	344.8	341.8	336.7	335.3	334.7	332.3	329.8
22					338.8	344.7	341.6	336.5	335.2	334.7	332.4	329.8
23					339.1	344.7	341.4	336.5	335.2	334.7	332.6	329.7
24					339.0	344.8	341.1	336.5	335.1	334.7	332.8	329.7
25					340.6	345.3	340.7	336.3	335.1	334.7	333.2	329.7
26					339.7	345.4	340.7	336.3	335.1	334.7	333.2	329.8
27					340.7	345.4	341.1	336.3	335.1	334.7	333.2	329.8
28					341.9	345.4	341.0	336.3	335.1	334.7	333.2	330.1
29					341.3	345.4	340.3	336.3	335.1	334.7	333.2	330.1
30					340.7	345.4	339.7	336.4	335.1	334.7	333.0	330.1
31					341.3	.....	339.4	336.6	.....	332.9	.....	330.3

Missouri River.—Leavenworth, Kan., 1874.

H. Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	330.8	337.3	332.5	335.3	335.8	335.7	340.9	336.5	335.3	333.8	332.9	330.3
2	330.8	337.0	332.2	335.0	335.8	335.4	341.1	336.4	335.0	333.6	333.0	330.3
3	331.1	337.5	332.5	334.9	335.7	335.3	340.7	336.3	334.7	333.5	333.0	331.2
4	331.1	337.0	333.6	334.7	335.5	335.3	340.7	336.1	334.7	333.4	333.0	331.8
5	330.1	336.7	334.1	334.6	335.3	338.3	341.0	335.9	334.6	333.3	333.2	331.8
6	328.8	336.4	334.4	334.5	335.0	339.8	341.3	335.8	334.5	333.3	333.2	331.8
7	329.3	336.3	334.4	334.3	334.8	341.3	341.6	335.7	334.3	333.2	333.2	331.8
8	330.1	336.4	334.3	334.1	334.8	342.3	341.8	335.7	334.2	333.0	333.3	331.8
9	330.8	336.6	334.2	334.1	334.7	342.5	341.9	335.7	334.0	333.0	333.2	331.8
10	331.3	336.7	334.5	334.1	334.8	342.2	341.2	335.5	334.0	333.0	333.2	332.1
11	331.8	336.8	334.6	334.0	335.4	341.7	340.4	335.4	333.9	332.8	333.2	332.2
12	331.3	336.8	334.3	334.0	335.7	341.7	339.7	335.3	334.2	332.8	333.2	332.4
13	331.3	336.9	334.4	333.8	335.3	342.1	339.2	335.3	334.3	332.8	333.0	332.5
14	330.8	336.9	334.4	333.8	334.9	342.7	338.8	335.5	334.3	332.8	332.9	332.3
15	329.8	336.7	333.9	333.7	334.6	342.5	338.5	335.5	334.6	332.8	332.9	332.2
16	331.8	336.7	333.7	333.7	334.6	342.9	338.2	335.3	334.7	332.8	333.0	332.2
17	332.9	336.7	333.4	333.7	334.6	343.3	338.1	335.3	334.7	332.8	333.0	331.8
18	333.2	336.7	334.1	333.7	334.5	343.3	337.8	335.2	334.7	332.8	333.0	331.8
19	333.0	336.3	335.7	333.7	334.5	343.2	337.8	335.2	334.7	332.8	333.0	330.8
20	333.2	335.3	336.3	333.8	334.7	343.1	337.8	335.1	334.4	332.8	333.0	330.5
21	332.8	334.3	336.7	334.0	334.9	342.7	337.8	334.7	334.3	332.9	332.6	330.3
22	332.6	335.3	337.1	334.2	334.9	342.4	337.7	334.6	334.2	333.0	331.9	330.3
23	333.2	335.3	337.9	334.9	335.3	341.9	337.7	334.5	334.1	333.0	331.8	330.3
24	332.7	335.3	338.3	337.1	336.9	341.5	337.7	334.5	334.0	333.0	331.6	330.1
25	335.3	334.8	338.5	337.3	337.1	341.3	337.8	334.3	334.0	332.9	331.6	330.2
26	335.7	.....	337.7	337.0	336.9	340.9	337.7	335.9	334.1	332.9	331.3	330.2
27	335.8	.....	337.1	336.4	336.6	340.9	337.3	337.1	334.0	332.9	331.3	.....
28	336.5	.....	336.8	336.1	336.3	340.8	337.1	336.8	334.0	332.9	330.8	.....
29	335.8	.....	336.3	335.7	336.1	340.7	336.9	336.3	333.9	332.9	330.3	.....
30	336.2	.....	335.9	335.7	335.9	340.7	336.7	335.9	333.8	332.9	330.3	.....
31	336.3	.....	335.7	335.7	336.8	340.7	336.7	335.7	333.8	332.9	330.3	.....

H. Ex. 28—14

Missouri River.—Leavenworth, Kan., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	330.0	.....	.....	337.3	344.6	338.7	343.8	340.3	338.1	336.3	334.7	.....
2	331.2	.....	.....	337.3	343.8	339.2	343.2	340.1	337.9	336.3	334.7	331.1
3	330.8	.....	.....	336.0	343.0	341.2	342.9	339.8	338.2	336.0	334.6	331.3
4	333.5	.....	.....	335.3	342.9	342.2	343.4	339.6	338.3	335.8	334.7	331.1
5				335.3	342.4	341.7	343.9	339.4	338.3	335.8	334.6	331.3
6				337.1	341.7	341.6	343.5	339.3	340.3	335.7	334.5	331.5
7				338.6	341.4	341.8	343.4	338.8	341.0	335.8	334.5	331.5
8				338.4	340.8	342.1	343.3	338.4	340.7	335.8	334.4	331.4
9				338.7	340.7	341.8	343.0	337.8	340.3	335.7	334.4	331.3
10				339.3	340.3	341.4	342.8	337.8	339.8	335.8	334.4	331.1
11				339.1	339.8	342.1	342.9	337.8	338.8	335.3	334.4	331.2
12				338.9	339.8	341.9	343.2	337.8	339.3	335.3	334.4	332.3
13				339.4	339.3	340.6	343.2	337.7	338.6	335.3	334.4	332.3
14				339.3	338.9	340.4	343.1	337.8	338.8	335.1	334.4	332.3
15			332.3	338.9	338.9	340.1	342.9	337.7	338.6	335.1	334.3	332.3
16			332.3	339.2	338.9	339.8	342.6	337.5	338.5	335.0	334.3	332.7
17			332.4	340.7	338.8	339.6	342.2	337.3	338.5	335.0	334.1	.....
18			332.6	340.1	338.8	339.3	341.8	337.1	338.3	334.9	333.5	.....
19			331.9	339.3	338.8	339.7	341.8	336.9	338.6	334.9	333.8	.....
20			331.6	338.7	338.8	339.8	341.5	336.8	338.3	334.8	333.5	332.4
21			332.3	336.4	338.6	341.7	341.0	336.8	338.3	334.8	333.5	333.0
22			332.3	336.6	338.4	342.8	340.7	336.8	337.9	334.8	333.5	333.1
23			332.3	339.4	338.8	342.8	340.3	336.6	337.4	334.7	.....	333.7
24			332.3	341.3	338.8	342.7	340.0	335.8	337.2	334.7	.....	332.9
25			332.6	342.6	338.6	343.5	340.0	335.8	337.1	334.7	.....	333.3
26			332.3	343.3	338.5	344.0	340.1	336.1	336.9	334.7	.....	333.3
27			332.3	343.9	338.6	344.2	339.8	336.7	336.8	334.7	.....	333.3
28			332.4	344.4	338.4	344.5	340.1	337.0	336.6	334.7	.....	333.2
29			335.3	344.8	338.5	344.6	340.1	337.7	336.3	334.6	.....	333.0
30			335.3	345.1	338.7	344.5	340.3	338.0	336.3	334.6	.....	332.7
31			337.4	.....	338.7	.....	340.3	338.0	336.3	334.6	.....	332.9

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	333.0	.....	332.8	337.7	337.7	339.6	343.7	339.1	335.8	336.2	335.2	332.8
2	334.3	.....	332.4	338.4	337.5	339.6	343.7	338.8	336.6	336.0	335.3	.....
3	333.8	332.9	331.3	338.6	337.4	340.4	343.7	338.6	336.6	336.0	335.5	.....
4	333.4	.....	332.5	338.3	337.6	341.3	343.7	338.3	337.1	336.0	335.4	.....
5	333.2	.....	332.3	337.8	337.8	341.4	344.1	338.2	336.9	336.0	335.3	.....
6	333.2	.....	332.3	337.8	339.9	340.8	344.3	338.0	338.2	336.0	335.2	.....
7	333.1	.....	332.3	338.2	339.4	341.7	343.8	337.8	338.8	335.8	335.0	.....
8	333.1	.....	333.8	338.0	339.8	342.2	343.3	338.0	338.6	335.8	335.0	.....
9	333.2	332.7	335.3	337.8	339.8	342.4	343.3	338.0	338.5	335.8	335.0	.....
10	333.3	332.9	335.3	337.8	339.8	342.3	343.3	338.0	338.4	335.7	334.9	.....
11	333.1	333.3	335.1	337.8	339.8	342.8	342.8	338.3	338.6	335.6	334.8	.....
12	331.8	333.1	335.1	338.5	339.3	343.2	342.7	338.5	338.6	335.5	334.8	335.8
13	331.5	332.8	333.8	338.1	338.7	343.2	342.5	338.4	338.6	335.4	334.7	332.7
14	331.3	333.1	334.3	338.9	338.2	343.3	342.5	337.8	339.3	335.3	334.8	332.5
15	331.7	332.7	335.8	341.7	337.6	343.2	342.0	337.7	339.7	335.3	334.8	332.5
16	333.1	332.5	335.7	342.6	337.3	343.2	341.8	337.7	339.6	335.3	334.8	332.5
17	333.7	332.5	336.4	342.6	337.1	343.1	341.7	338.0	339.0	335.1	334.4	332.5
18	334.1	332.4	.....	342.0	337.0	342.8	341.5	337.7	339.6	335.1	334.2	.....
19	334.3	332.4	.....	341.2	337.0	342.8	341.3	337.7	338.5	334.8	334.0	.....
20	333.8	332.8	.....	340.8	337.1	343.2	341.3	337.6	338.3	334.8	333.9	.....
21	333.5	332.8	.....	340.3	337.0	343.2	341.0	337.6	338.3	334.8	333.6	.....
22	333.4	332.9	.....	339.9	337.0	343.5	341.0	338.4	338.3	334.6	333.4	.....
23	.....	333.3	.....	340.5	337.0	343.4	340.8	338.3	337.8	334.7	333.3	.....
24	.....	333.5	.....	340.4	337.0	343.1	340.5	338.4	337.6	334.7	333.0	.....
25	.....	333.3	.....	340.3	336.9	342.8	340.3	338.3	337.8	334.8	332.8	.....
26	331.8	333.2	.....	339.8	336.9	342.6	340.1	338.3	337.8	334.6	332.8	.....
27	331.8	333.0	334.8	339.6	337.5	342.4	340.1	337.6	337.3	335.3	332.6	.....
28	333.4	332.9	336.0	339.3	337.8	343.1	340.0	336.6	336.8	335.3	332.6	.....
29	333.1	333.0	337.0	339.7	339.7	343.3	339.9	335.1	336.4	335.2	332.6	.....
30	331.8	.....	336.9	339.1	340.0	343.6	339.7	335.7	336.3	335.1	332.8	.....
31	332.0	.....	336.9	.....	.....	.....	339.3	335.6	.....	335.0	.....	.....

Missouri River.—Leavenworth, Kan., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1				336.5	340.6	345.1	346.3	339.6	336.3	333.8	334.5	333.5
2			335.8	336.6	340.6	343.4	346.3	339.6	336.1	333.8	334.4	332.3
3			335.9	337.4	340.3	343.4	346.4	339.5	336.0	333.7	334.3	332.9
4			335.9	337.3	339.5	344.2	346.2	339.3	335.8	333.8	334.5	332.7
5			335.8	337.0	339.3	343.4	345.9	339.6	335.6	334.2	334.5	332.3
6			335.7	338.7	338.9	343.8	345.6	339.6	335.3	334.0	334.5	332.3
7			335.8	341.8	338.7	343.8	345.3	339.3	335.3	334.0	334.5	332.2
8			335.9	343.0	339.7	345.3	344.8	339.2	335.3	334.0	334.4	332.0
9		338.7	.....	342.9	339.5	345.8	344.7	339.6	335.3	334.1	334.3	332.0
10		336.8	.....	341.8	339.5	346.8	344.9	339.4	335.3	333.9	334.3	332.0
11		335.3	.....	340.8	339.6	347.4	344.7	339.3	335.3	333.9	334.3	332.0
12		335.8	333.7	339.8	339.8	347.3	343.9	338.8	335.2	334.2	334.2	332.1
13		335.8	333.6	340.3	339.8	347.5	343.4	338.4	335.1	334.2	334.1	332.5
14		335.3	334.2	339.8	340.1	347.1	343.0	338.1	334.9	334.1	334.1	332.4
15		335.3	334.3	339.8	340.3	346.8	342.8	337.9	334.9	334.1	334.3	332.0
16		335.2	335.1	339.8	341.3	346.9	341.8	337.8	334.8	334.3	334.3	332.0
17		335.2	335.3	339.7	340.9	346.7	343.0	337.7	334.7	334.3	334.4	331.7
18			336.4	339.9	340.8	346.3	343.6	337.4	334.7	334.3	334.4	331.7
19			335.8	340.5	341.3	345.7	343.8	337.3	334.7	334.6	334.3	331.7
20			335.8	340.4	342.9	345.3	343.6	337.0	334.5	334.9	334.3	332.3
21			335.8	340.5	342.8	345.1	343.3	337.3	334.4	335.2	334.3	332.5
22			335.6	340.0	342.8	344.5	343.1	337.3	334.3	335.7	334.2	332.8
23			335.8	340.8	342.5	344.1	342.8	337.1	334.3	335.7	334.1	333.2
24			336.8	340.0	342.2	343.8	342.7	336.9	334.2	335.6	333.9	333.3
25			336.2	340.8	342.0	343.7	341.9	336.8	334.2	335.4	333.9	333.2
26			336.1	340.6	341.7	343.6	341.5	336.8	334.1	335.3	333.9	332.9
27			336.1	340.3	342.7	345.2	340.9	336.8	334.1	335.2	333.8	333.0
28			336.3	340.3	344.2	345.5	340.6	336.8	334.0	334.9	333.7	333.6
29			336.3	340.5	345.5	345.8	340.3	336.7	333.9	334.8	333.7	333.9
30			336.9	340.3	345.1	346.1	340.1	336.5	333.8	334.6	333.5	333.7
31			337.0	.....	.....	.....	339.8	336.4	.....	334.5	.....	333.5

Missouri River.—Leavenworth, Kan., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	333.3	333.1	334.7	337.4	341.2	343.7	346.2	342.0	336.0	334.7	333.5	333.5
2	332.9	333.0	334.6	337.0	341.0	344.3	346.3	341.9	335.9	334.7	333.6	333.5
3	332.7	332.9	334.3	336.6	340.9	343.0	346.3	341.2	335.8	334.6	333.5	333.4
4	332.3	332.8	334.4	336.3	340.8	342.8	346.2	340.8	335.8	334.6	333.5	333.4
5	332.0	332.6	334.4	336.2	340.6	342.9	346.0	340.4	335.7	334.6	333.6	333.4
6	332.0	332.5	334.4	336.4	340.4	343.7	345.7	340.3	335.6	334.4	333.6	333.4
7	331.9	332.5	334.4	338.6	340.1	344.4	345.2	340.0	335.7	334.3	333.5	333.4
8	331.5	333.0	334.4	336.6	339.8	345.0	344.8	339.8	335.7	334.2	333.5	333.4
9	331.5	333.7	334.6	336.4	339.4	345.4	344.8	339.7	335.8	334.1	333.5	333.3
10	331.4	334.1	334.5	336.4	339.2	345.6	344.8	340.0	335.8	334.0	333.5	333.4
11	331.5	334.2	334.4	336.6	338.8	345.7	344.8	339.4	336.0	334.3	333.5	333.4
12	331.8	334.0	334.6	337.6	338.7	345.7	345.0	339.1	336.0	334.1	333.5	333.3
13	331.8	333.9	334.8	337.2	338.5	345.8	345.0	338.8	336.0	334.0	333.5	333.3
14	332.0	333.8	334.9	337.2	338.3	345.7	344.3	338.8	335.9	333.9	333.6	.....
15	332.2	333.7	335.3	336.8	338.0	344.8	343.5	338.4	335.8	333.9	333.7	.....
16	332.3	333.7	335.4	336.3	337.6	344.2	343.0	338.3	335.6	334.0	333.7	.....
17	332.4	333.7	335.4	336.3	337.3	343.7	342.7	338.1	335.6	333.9	333.7	.....
18	332.5	333.8	336.3	336.3	337.7	343.5	342.7	337.8	335.5	333.8	333.9	.....
19	332.9	333.8	335.6	336.3	337.7	343.5	342.7	337.6	335.3	333.8	333.9	.....
20	333.4	334.0	334.9	336.6	337.8	343.6	342.5	337.4	335.2	333.8	333.9	.....
21	332.8	334.1	334.8	336.8	337.8	344.2	342.4	337.3	335.0	333.7	333.8	.....
22	332.5	334.7	334.7	336.8	338.1	344.7	341.9	337.3	335.1	333.7	333.7	.....
23	332.3	335.2	334.6	336.8	338.2	344.9	341.5	337.3	335.0	333.7	333.7	.....
24	332.3	334.9	334.6	336.9	338.3	345.1	341.2	337.2	334.8	333.7	333.7	.....
25	332.3	334.7	334.4	337.4	340.8	345.3	341.2	337.0	335.0	333.6	333.6	.....
26	332.4	334.7	334.3	338.8	342.5	345.7	341.4	336.8	335.2	333.6	333.6	.....
27	332.7	335.1	334.4	340.0	342.3	345.9	342.1	336.7	335.3	333.6	333.6	.....
28	332.6	335.1	334.3	340.3	342.7	346.1	343.3	336.4	335.2	333.5	333.6	.....
29	332.7		334.3	341.5	343.3	346.1	343.1	336.3	334.9	333.6	333.5	.....
30	332.7		335.4	341.5	344.0	346.0	342.5	336.2	334.8	333.5	333.6	.....
31	333.3		337.4	341.5	344.2		342.0	336.0		333.5		.....

Missouri River.—Leavenworth, Kan., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1			331.2	336.8	336.5	339.5	344.2	340.0	334.3	332.5	332.0	332.6
2			331.4	336.9	336.6	339.5	343.9	340.2	334.3	332.5	332.0	332.4
3			331.9	337.4	337.2	339.7	343.7	340.4	334.2	332.6	332.1	332.3
4			332.2	337.5	337.6	340.0	344.0	340.2	334.0	332.4	332.1	331.9
5			332.9	337.3	337.7	340.3	343.1	339.9	333.9	332.3	332.2	332.2
6			333.6	338.8	337.7	340.0	343.0	339.4	333.8	332.3	332.3	332.1
7			333.3	339.9	337.9	339.8	342.9	339.1	333.7	332.4	332.4	332.3
8			333.0	342.2	337.8	339.9	343.1	338.3	333.6	332.3	332.8	332.1
9			332.6	342.6	337.7	340.3	342.7	337.9	333.6	332.3	333.3	332.1
10		332.7	334.3	343.1	337.6	340.4	342.0	337.7	333.4	332.3	333.3	332.3
11		332.4	335.5	343.2	337.6	340.2	341.5	337.3	333.3	332.3	333.7	331.9
12		332.0	335.0	342.2	337.7	339.9	341.5	337.1	333.4	332.3	334.8	331.9
13		331.7	335.0	340.7	337.7	339.8	341.3	336.9	333.4	332.3	334.8	331.7
14		331.5	335.4	339.8	337.7	339.9	341.0	336.6	333.3	332.3	335.4	.....
15		331.4	335.7	339.2	337.6	340.1	340.7	336.5	333.2	332.3	335.4	.....
16		331.5	335.5	338.6	337.5	340.4	340.4	336.3	333.1	332.3	335.2	.....
17		331.6	335.2	338.2	337.6	340.8	340.4	336.2	333.0	332.8	334.7	.....
18		331.6	334.7	337.7	337.8	342.2	340.3	336.1	332.9	332.8	334.3	.....
19		331.7	334.5	337.2	337.9	343.1	340.1	335.9	332.8	332.8	334.1	.....
20		331.7	334.1	337.1	337.9	342.8	340.0	335.7	332.8	332.7	333.9	.....
21		331.7	333.7	337.2	337.8	342.4	339.9	335.6	332.6	332.4	333.6	.....
22		331.6	333.8	336.9	337.8	341.7	340.0	335.4	332.6	332.3	333.4	.....
23		331.7	333.9	336.8	337.8	341.5	340.5	335.2	332.5	332.2	333.3	.....
24		331.7	334.3	336.7	338.2	342.4	340.2	335.1	332.4	332.1	333.0	.....
25		331.6	333.8	336.7	338.3	343.2	339.8	335.1	332.3	332.1	332.8	.....
26		331.6	333.5	336.7	338.6	343.5	339.9	335.0	332.3	332.0	332.8	.....
27		331.5	333.5	336.6	338.7	344.2	339.8	334.9	332.3	332.0	332.7	.....
28		331.3	335.5	336.5	338.5	344.1	339.7	334.8	332.3	332.0	332.8	.....
29			336.8	336.5	338.5	344.1	339.7	334.7	332.3	331.9	332.8	.....
30			337.2	336.6	338.7	344.2	339.9	334.6	332.3	331.9	332.8	.....
31			337.1	336.6	339.7	.....	340.1	334.4	332.3	331.9	.....	.....

Missouri River.—Leavenworth, Kan., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	330.8	334.5	333.3	334.8	336.7	342.3	339.5	337.7	334.3	333.0	333.0
2	.....	330.8	333.8	333.3	334.9	336.4	342.7	339.3	337.5	334.3	333.0	332.9
3	.....	330.6	332.8	334.0	335.1	336.4	342.9	339.3	338.3	334.4	332.9	332.9
4	.....	330.6	331.8	334.2	335.3	337.5	342.8	339.3	338.6	334.3	332.9	332.8
5	.....	330.7	331.3	334.0	335.3	337.5	342.9	339.3	339.0	334.2	332.9	332.8
6	.....	330.7	331.8	336.4	334.8	339.3	342.9	339.1	338.8	334.1	332.9	.....
7	331.8	330.8	332.1	341.1	334.6	339.5	343.0	339.1	338.1	334.1	332.9	.....
8	331.8	330.6	332.2	340.8	334.4	339.5	343.3	339.0	337.4	334.0	332.9	.....
9	331.5	330.8	332.2	339.7	334.4	339.0	343.6	339.0	336.8	333.8	332.9	.....
10	331.4	331.0	332.0	338.6	334.5	339.3	343.7	339.0	336.5	333.7	333.0	.....
11	331.2	331.0	332.0	337.9	334.5	338.8	343.7	338.8	336.3	333.7	333.1	.....
12	331.3	332.1	332.3	337.6	334.5	338.6	343.7	338.4	336.1	333.6	333.2	.....
13	331.2	332.6	332.3	337.1	334.5	338.4	343.5	338.1	336.0	333.6	333.2	.....
14	331.1	332.2	332.3	336.6	334.4	338.8	343.4	337.8	335.8	334.1	333.3	.....
15	330.8	331.7	332.2	336.1	334.4	338.8	343.8	337.6	335.5	334.0	333.3	.....
16	330.8	332.0	332.1	335.8	334.3	339.1	343.4	337.3	335.4	333.9	333.2	.....
17	330.8	332.1	331.8	335.7	334.3	341.3	343.3	337.1	335.2	334.2	333.2	.....
18	330.8	332.2	331.5	335.3	334.3	341.1	343.3	336.9	334.9	334.2	333.1	.....
19	330.8	332.8	331.4	334.8	334.2	341.0	343.2	336.7	334.8	334.2	333.1	.....
20	330.9	332.7	331.2	334.7	334.1	340.8	343.2	336.6	334.8	334.2	333.2	.....
21	331.1	332.2	331.0	334.6	334.1	341.4	343.2	336.6	334.8	334.1	333.1	.....
22	331.3	331.8	330.9	334.6	334.2	342.3	343.3	336.6	334.7	334.0	333.0	.....
23	331.3	331.8	330.9	334.8	334.3	342.0	343.2	336.8	334.6	333.9	333.0	.....
24	331.2	331.9	331.1	336.3	334.3	341.6	342.3	337.5	334.5	333.8	332.9	.....
25	331.1	332.1	333.8	336.5	334.4	341.4	341.4	337.5	334.5	333.7	332.9	.....
26	331.0	332.3	334.8	336.1	334.8	340.9	340.8	337.5	334.4	333.6	332.9	.....
27	331.1	333.9	334.8	335.8	335.8	341.0	340.3	337.2	334.6	333.5	332.9	.....
28	331.1	334.6	335.3	335.4	336.6	341.4	340.0	337.5	334.8	333.4	332.9	.....
29	331.2	334.5	335.0	335.2	336.8	341.5	339.8	338.1	334.7	333.3	333.0	331.8
30	331.2	.....	334.9	334.8	337.1	341.8	339.7	337.9	334.5	333.2	333.0	332.0
31	330.9	.....	335.1	334.8	336.9	.....	339.7	337.8	.....	333.1	.....	332.3

Missouri River.—Leavenworth, Kan., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	332.8	333.2	334.9	343.9	352.2	343.5	343.6	338.1	335.2	334.9	335.4	333.7
2	332.9	333.2	335.2	343.1	351.1	344.0	343.8	338.0	335.1	335.0	335.4	333.7
3	333.0	333.1	335.6	342.4	349.6	343.9	343.6	337.8	335.1	335.1	335.5	333.6
4	333.0	333.0	335.5	343.2	347.6	343.5	342.7	337.6	335.1	335.1	335.6	333.5
5	333.1	333.8	335.5	343.8	345.2	343.2	342.1	337.5	335.0	335.2	335.5	333.3
6	333.1	334.9	335.7	344.1	343.6	343.0	341.3	337.4	335.0	335.2	335.2	333.1
7	333.1	335.7	335.6	344.4	342.6	342.6	340.7	337.3	334.9	335.2	335.1	333.1
8	333.0	336.4	335.4	344.7	342.3	342.4	340.2	337.3	334.9	335.2	335.1	333.1
9	333.0	336.0	335.1	345.4	342.0	342.2	339.8	337.2	334.9	335.3	335.3	333.1
10	333.0	336.0	335.2	345.9	342.0	342.4	340.2	337.1	335.0	335.3	335.5	333.1
11	333.0	336.0	336.9	346.4	341.7	342.7	340.4	337.1	335.1	335.4	336.0	333.1
12	333.0	.....	336.6	346.8	341.5	342.8	340.7	337.0	335.5	335.5	335.9	333.1
13	333.0	335.8	336.9	347.1	341.6	342.9	341.0	336.9	335.5	335.4	335.7	333.0
14	332.9	335.7	338.6	346.4	341.7	343.0	341.3	336.8	335.3	335.4	335.5	333.0
15	333.0	335.3	339.2	344.8	341.7	343.3	341.3	336.8	335.2	335.3	335.5	333.0
16	333.0	334.7	339.7	343.7	341.3	344.3	341.2	336.6	335.2	335.3	335.4	333.0
17	333.0	334.5	339.2	343.2	340.9	344.7	340.9	336.5	335.2	335.4	335.3	333.1
18	333.0	334.5	338.8	342.8	340.4	344.4	340.7	336.4	335.2	335.3	335.2	333.1
19	333.1	334.5	338.4	343.5	340.1	343.9	340.2	336.4	335.1	335.2	335.1	333.0
20	333.2	334.4	338.1	345.1	340.1	343.3	339.6	336.3	335.1	335.2	334.9	332.9
21	333.2	334.3	337.9	345.9	340.4	342.8	339.2	336.2	335.0	335.1	334.4	333.0
22	333.2	334.3	337.8	346.7	341.1	342.6	339.0	336.1	334.9	334.9	334.1	333.1
23	333.2	334.2	337.5	347.4	341.8	342.4	338.7	336.0	334.9	334.8	333.9	333.2
24	333.2	334.2	337.5	348.3	341.6	342.3	338.5	335.8	334.7	334.7	333.7	333.4
25	333.3	334.2	337.6	348.9	341.2	342.0	338.5	335.6	334.6	334.7	333.5	333.5
26	333.3	334.3	337.7	349.6	341.0	341.6	338.4	335.5	334.5	334.8	333.5	333.5
27	333.4	334.6	338.7	350.5	340.9	341.7	338.3	335.4	334.5	334.8	333.4	333.5
28	333.4	334.9	340.0	351.8	340.8	342.6	338.3	335.3	334.5	334.8	333.4	333.5
29	333.4	341.0	341.0	352.6	340.8	343.2	338.3	335.2	334.5	334.9	333.7	333.4
30	333.4	343.8	343.8	352.6	341.2	343.1	338.1	335.2	334.7	335.0	334.0	333.3
31	333.4	343.3	343.3		342.2		338.1	335.2		335.3		333.2

Missouri River.—Leavenworth, Kan., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	333.0	330.7	331.1	333.1	336.8	339.7	345.8	338.8	334.4	332.6	333.4	331.9
2	332.9	330.6	333.7	333.4	337.6	339.2	345.9	338.7	334.4	332.6	333.4	331.8
3	332.7	330.5	334.7	333.9	337.9	338.7	345.9	338.5	334.3	332.6	333.3	331.6
4	332.5	330.5	335.3	334.3	337.6	338.5	345.7	338.3	334.2	332.6	333.3	331.5
5	332.3	330.4	335.4	334.2	337.2	338.2	345.4	338.0	334.1	332.7	333.4	331.4
6	333.2	330.5	335.7	334.1	336.9	337.7	344.8	337.8	334.0	332.7	333.4	331.3
7	332.1	330.7	336.3	334.4	336.7	337.5	344.2	337.6	333.9	332.7	333.3	331.2
8	331.9	331.1	336.3	335.0	336.7	337.2	343.7	337.6	333.9	332.8	333.3	330.7
9	331.8	330.9	335.7	335.6	336.7	337.1	343.3	337.5	333.8	332.9	333.4	330.1
10	331.8	330.7	334.9	336.3	336.8	337.2	343.0	337.4	333.9*	333.0	333.4	329.8
11	331.7	330.7	334.1	337.0	336.8	337.2	342.5	337.3	333.7	333.0	333.4	329.7
12	331.7	330.8	333.1	339.6	337.0	337.4	342.2	337.1	333.6	333.2	333.4	329.5
13	331.8	332.8	333.1	341.4	337.2	338.0	342.2	336.7	333.5	333.9	333.5	329.4
14	332.0	334.1	333.2	340.7	337.5	340.0	342.4	336.5	333.4	334.5	333.7	329.3
15	332.1	334.3	333.2	339.9	338.2	340.3	342.4	336.2	333.4	334.5	333.9	329.2
16	332.1	334.0	333.2	339.4	339.4	340.4	342.5	336.0	333.3	334.3	334.0	332.5
17	332.1	333.6	333.2	338.7	339.4	340.6	342.6	335.8	333.2	334.2	333.9	332.9
18	332.1	333.5	334.2	338.3	339.1	341.4	342.8	335.5	333.1	334.1	333.7	333.2
19	332.0	333.4	334.7	338.1	338.5	342.6	342.5	335.4	333.0	334.0	333.5	333.5
20	331.9	333.4	334.8	338.0	338.3	343.3	341.8	335.3	332.9	333.8	333.4	331.2
21	331.7	332.9	334.4	337.9	339.0	343.6	341.3	335.1	332.8	333.6	333.3	330.6
22	331.5	332.4	334.0	337.9	339.8	343.8	340.9	335.0	332.7	333.5	333.2	330.3
23	331.3	331.5	333.6	337.8	339.6	343.7	340.5	334.8	332.6	333.6	333.2	330.2
24	331.1	330.9	333.1	337.5	339.2	343.9	340.0	334.8	332.5	333.7	333.1	330.2
25	331.0	330.6	333.0	337.2	339.0	344.0	339.7	334.6	332.5	333.8	333.0	330.3
26	330.9	330.4	333.1	337.0	338.8	344.3	339.3	334.6	332.5	333.9	332.8	330.3
27	330.9	330.2	333.2	337.2	338.8	344.7	339.1	334.6	332.5	334.0	332.6	330.4
28	330.8	330.4	333.3	337.0	338.9	345.0	338.8	334.5	332.6	334.1	332.4	330.5
29	330.8		333.3	336.7	339.2	345.3	338.6	334.5	332.6	334.1	332.2	330.7
30	330.7		333.3	336.6	339.7	345.7	339.2	334.5	332.7	333.9	332.0	330.9
31	330.7		333.1		339.8		338.7	334.4		333.6		331.2

Missouri River.—Leavenworth, Kan., 1883.

Day	January	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	330.4	.....	333.4	337.7	337.5	342.3	347.6	339.8	336.9	334.5	335.5	333.1
2	330.7	.....	332.6	337.7	337.5	342.3	347.1	339.4	336.7	334.5	335.4	332.7
3	331.0	.....	333.9	337.9	337.4	342.9	346.2	339.4	336.6	334.3	335.3	332.3
4	331.3	.....	333.9	338.0	337.5	343.5	345.4	339.5	336.4	334.6	335.1	332.3
5	331.4	334.4	335.1	338.0	337.3	343.8	345.1	339.5	336.3	334.8	335.1	332.2
6	331.8	334.4	335.4	338.2	337.1	343.8	344.9	339.2	336.0	334.8	335.2	332.2
7	332.4	334.4	334.9	338.1	337.1	343.4	345.0	338.7	335.8	335.0	335.3	332.2
8	333.0	334.4	334.4	338.1	337.0	343.3	345.0	338.5	335.8	335.1	335.3	332.3
9	336.6	334.4	333.9	338.1	337.0	343.4	345.1	338.5	335.6	335.0	335.3	332.4
10	.....	334.4	335.3	337.9	337.1	343.3	345.2	338.6	335.5	334.8	335.2	332.6
11	.....	334.4	337.0	337.8	337.4	343.0	345.5	338.7	335.3	334.6	335.2	332.7
12	.....	334.5	337.4	337.8	337.9	343.4	345.8	338.6	335.2	334.3	335.1	332.8
13	.....	334.3	336.8	337.7	338.9	343.4	345.8	338.6	335.0	334.5	335.1	333.0
14	.....	334.0	336.7	338.0	339.3	343.1	345.6	338.8	334.9	334.2	335.0	333.1
15	.....	334.0	337.4	338.6	339.6	343.2	345.3	338.6	334.8	334.0	335.0	333.2
16	.....	334.7	338.4	338.9	340.6	343.7	344.7	338.7	334.8	333.9	334.8	333.2
17	.....	335.1	338.2	339.5	341.4	344.9	344.0	338.8	334.8	333.9	334.2	333.1
18	.....	335.9	337.9	340.7	341.8	346.6	343.4	338.9	334.7	334.0	334.0	332.8
19	.....	336.4	338.2	341.2	342.5	347.5	342.7	339.3	334.7	334.2	333.7	332.4
20	.....	336.3	338.3	342.2	342.2	347.3	342.2	339.8	334.5	334.8	333.5	332.4
21	.....	335.9	338.1	341.4	341.8	346.7	341.9	339.5	334.4	335.3	333.3	331.7
22	.....	335.7	336.9	340.1	341.4	346.9	341.5	339.1	334.5	335.2	333.4	331.6
23	.....	335.6	336.4	339.1	341.3	347.4	341.0	338.6	334.4	334.9	333.8	330.9
24	.....	337.0	336.3	338.4	341.2	348.0	340.8	338.4	334.4	335.0	334.2	330.9
25	.....	337.4	336.1	338.1	342.7	348.8	340.7	338.1	334.5	335.1	334.1	330.7
26	.....	336.7	337.7	338.0	344.5	349.3	340.5	337.9	334.6	335.0	334.0	330.3
27	.....	336.2	339.3	338.0	344.6	349.2	340.1	337.7	334.7	335.1	334.0	330.6
28	.....	334.4	338.9	338.0	343.8	348.8	340.2	337.5	334.8	335.2	333.8	330.7
29	.....	.....	338.6	337.7	343.2	348.4	340.3	337.3	334.6	335.5	333.5	331.0
30	.....	.....	338.2	337.5	342.9	348.2	340.4	337.3	334.5	335.6	333.2	330.6
31	.....	.....	337.7	.....	342.8	.....	339.8	337.2	.....	335.6	.....	331.7

Missouri River.—Leavenworth, Kan., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	333.3	333.6	341.2	339.3	341.3	343.8	341.8	338.3	336.5	335.6	333.2
2	.....	333.3	333.5	341.4	340.1	341.4	343.8	341.3	338.2	336.5	335.6	333.4
3	.....	333.3	333.6	342.1	340.3	341.6	344.3	340.6	337.8	336.6	335.6	333.6
4	.....	333.2	333.7	342.4	340.2	341.8	344.8	340.2	337.6	336.6	335.6	333.8
5	.....	333.2	333.6	344.0	340.1	341.9	345.1	339.8	337.5	336.6	335.5	333.9
6	.....	333.2	333.5	345.2	340.0	341.7	345.1	339.3	337.3	337.1	335.5	334.2
7	.....	333.3	333.5	345.4	340.0	341.7	344.9	338.9	337.2	337.6	335.5	334.5
8	333.4	333.3	333.6	345.7	340.4	342.1	344.3	338.7	337.1	337.6	335.5	334.6
9	333.2	333.3	333.9	345.8	340.8	342.7	343.9	338.4	337.2	337.4	335.5	334.6
10	333.4	333.3	334.2	345.0	340.2	342.9	343.8	338.2	337.1	337.3	335.5	334.5
11	333.5	333.3	335.2	343.5	339.6	342.8	343.4	338.0	336.8	337.3	335.5	334.5
12	333.6	333.3	335.5	342.5	339.3	342.8	343.2	337.8	336.7	337.3	335.5	334.3
13	333.8	333.3	334.8	341.9	339.2	342.9	343.3	337.8	336.6	337.4	335.5	333.9
14	334.0	333.1	334.8	341.4	339.0	342.8	342.9	337.8	336.6	337.6	335.5	333.4
15	334.1	333.0	334.8	341.0	338.8	342.9	342.5	337.8	336.5	337.5	335.5	332.8
16	334.1	332.9	335.4	340.8	338.6	343.4	342.2	337.7	336.5	337.3	335.5	333.0
17	334.2	332.9	336.8	340.7	338.6	344.1	341.9	337.5	336.6	336.9	335.4	333.0
18	334.4	333.0	337.7	340.4	338.6	344.7	341.7	337.6	336.7	336.6	335.4	332.6
19	334.4	333.0	337.0	340.3	338.6	345.0	341.7	337.7	336.5	336.5	335.4	332.5
20	334.4	333.1	337.6	340.3	338.6	345.0	341.6	337.8	336.4	336.3	335.4	332.5
21	334.4	333.1	338.4	340.4	338.4	345.1	341.6	337.8	336.3	336.2	335.4	332.5
22	334.4	333.1	338.4	340.4	338.3	345.3	341.5	337.8	336.2	336.0	335.4	332.5
23	334.2	333.1	338.6	340.2	338.8	345.6	341.3	337.8	336.2	335.9	335.4	332.5
24	334.2	333.2	340.4	340.0	339.2	345.7	341.3	337.8	336.0	335.8	335.3	332.5
25	334.0	333.4	343.7	339.6	339.7	345.7	341.5	338.1	336.0	335.7	334.8	332.5
26	334.0	333.5	343.5	339.2	340.1	345.6	341.6	337.8	335.9	335.6	334.1	332.5
27	333.8	333.3	341.4	338.9	340.0	345.3	341.4	337.9	336.3	335.6	334.0	332.5
28	333.7	333.2	341.2	338.8	339.9	344.9	341.3	338.1	336.4	335.6	333.5	332.5
29	333.5	333.4	341.2	338.8	339.9	344.5	341.3	338.1	336.4	335.6	333.2	332.4
30	333.7	333.7	341.2	338.9	340.9	344.1	341.4	338.2	336.5	335.6	333.2	332.5
31	333.5	333.5	341.0	338.9	341.2	341.7	341.7	338.2	336.5	335.6	333.2	332.4

Missouri River.—Leavenworth, Kas., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	332.75	334.80	335.05	338.98	339.85	340.65	343.62	341.60	338.60	335.47	335.75	335.35
2	332.75	335.05	335.15	339.10	339.90	340.85	343.70	341.25	338.25	335.35	335.80	335.35
3	332.70	335.10	335.40	339.12	339.65	340.97	343.80	340.72	338.20	335.35	335.72	335.30
4	332.80	335.25	336.00	339.20	339.20	340.80	343.65	340.53	338.17	335.35	335.65	335.22
5	332.92	335.27	336.65	339.17	339.05	341.15	343.70	340.37	337.77	335.27	335.65	335.40
6	333.50	335.50	338.80	339.20	338.98	341.45	343.87	340.25	337.48	335.23	335.52	335.47
7	334.07	335.40	339.35	339.30	338.90	341.75	344.05	340.05	337.47	335.15	335.37	335.25
8	334.63	335.35	338.80	339.30	338.80	341.63	344.05	340.20	337.50	335.10	335.27	333.85
9	334.95	335.30	340.20	339.40	338.70	341.37	343.67	340.40	337.27	334.97	335.30	332.35
10	334.97	335.25	339.65	339.30	338.40	341.85	343.55	340.42	337.20	334.87	335.42	331.85
11	334.90	335.20	338.90	339.10	338.17	344.05	343.35	340.78	337.20	334.85	335.65	332.20
12	334.90	335.15	339.65	339.25	338.03	344.23	343.27	340.70	337.32	334.88	335.72	332.15
13	334.83	335.12	339.70	339.70	337.90	344.27	343.23	340.45	337.25	335.05	335.95	332.10
14	334.70	335.15	339.80	339.85	337.77	344.33	343.15	340.10	337.57	335.20	335.90	332.20
15	334.63	335.13	339.82	340.72	337.70	344.40	343.10	339.70	337.63	335.45	335.75	332.15
16	334.70	335.05	340.35	340.53	337.93	345.20	342.82	339.45	337.57	335.52	335.57	332.10
17	334.55	335.05	340.15	340.12	338.00	345.75	342.63	339.20	337.60	335.57	335.47	332.15
18	334.45	335.07	339.85	339.70	338.20	346.17	342.40	339.05	337.77	335.65	335.47	332.22
19	334.37	335.05	339.83	339.23	339.15	346.23	342.15	338.70	337.77	335.67	335.63	332.25
20	334.38	335.05	339.25	338.80	339.36	345.77	342.00	338.60	337.40	335.60	335.65	332.25
21	334.30	335.05	338.65	338.50	339.25	345.70	341.75	338.15	336.95	335.55	335.65	332.60
22	334.37	335.03	338.45	337.90	339.12	345.55	341.50	338.00	336.67	335.30	335.60	332.85
23	334.37	335.05	338.30	337.93	339.20	345.30	341.67	337.90	336.57	335.23	335.52	332.95
24	334.35	334.97	338.23	338.30	339.95	345.07	341.93	337.90	336.53	335.27	335.45	333.15
25	334.40	334.93	338.97	338.92	339.98	344.80	342.23	337.95	336.32	335.40	335.45	333.25
26	334.40	334.95	339.60	339.15	339.85	344.67	342.30	338.10	336.05	335.42	335.45	333.50
27	334.45	334.92	339.25	339.43	339.80	344.57	342.18	338.20	335.95	335.25	335.45	334.50
28	334.55	334.05	339.05	339.45	339.65	344.45	342.10	338.05	335.87	335.37	335.45	335.65
29	334.65		339.15	339.63	339.87	344.20	341.75	338.08	335.75	335.47	335.45	335.30
30	334.70		339.08	339.97	340.20	343.87	341.70	338.22	335.60	335.55	335.37	335.22
31	334.80		338.92		340.30		341.67	338.55		335.75		335.30

Missouri River.—Fort Leavenworth, Kan., 1872.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	334.46	334.83	337.01	339.36	339.41	341.41	345.51	343.31	337.71	336.41	336.19	331.45
2	334.56	334.85	336.81	338.48	339.21	341.36	345.36	343.16	337.66	336.40	336.61	331.45
3	334.56	334.84	336.71	338.26	339.01	341.36	344.86	342.91	337.67	336.31	336.41	331.05
4	334.46	334.80	336.52	338.11	338.71	342.01	344.56	342.61	337.70	336.21	336.09	331.11
5	334.56	334.69	336.42	338.06	338.34	342.96	344.16	342.21	337.71	336.01	335.81	331.30
6	334.51	334.70	336.38	338.16	338.27	342.66	344.06	342.11	337.51	335.96	335.63	331.78
7	334.51	334.83	336.36	337.91	338.28	343.09	344.21	341.91	337.25	335.79	335.51	332.03
8	334.41	334.65	336.26	337.81	338.29	344.16	344.71	341.71	337.41	335.66	335.36	332.05
9	334.51	334.60	336.41	337.61	338.46	343.91	344.63	341.21	338.24	335.56	335.21	331.91
10	334.41	334.59	336.96	337.61	338.80	343.91	344.61	341.21	337.03	335.39	335.16	332.07
11	334.51	334.59	336.76	337.61	339.51	343.96	344.61	341.11	337.01	335.51	335.01	331.79
12	334.56	334.75	336.27	337.56	340.11	344.31	345.11	340.91	336.91	336.21	334.96	331.79
13	334.54	334.71	335.86	337.76	340.26	345.06	346.06	340.61	336.86	336.51	334.91	331.71
14	334.56	335.39	335.71	337.86	340.31	344.96	346.11	340.31	337.06	336.34	334.91	331.58
15	334.62	334.86	335.61	337.96	340.01	345.26	345.41	339.96	336.91	336.01	334.81	331.66
16	334.73	334.93	332.81	338.19	339.79	345.31	344.88	340.06	337.12	335.81	334.53	331.71
17	334.80	335.03	336.11	338.31	340.21	345.21	344.41	339.86	337.36	335.51	332.87	331.81
18	334.90	335.29	336.26	338.28	339.61	345.21	344.16	339.41	337.51	335.46	332.61	331.94
19	334.95	335.48	336.16	338.06	340.16	345.11	343.91	339.31	337.31	335.31	332.37	332.91
20	334.94	335.85	336.16	337.71	340.46	344.96	343.51	339.26	337.98	335.26	331.61	335.61
21	334.80	335.74	336.16	337.66	340.36	344.81	343.66	339.16	339.01	335.11	331.26	332.41
22	334.91	335.80	336.41	338.16	340.31	344.71	344.21	339.01	339.36	335.18	331.23	332.81
23	334.86	335.76	336.46	338.01	340.10	344.81	344.61	338.86	338.21	335.08	331.31	335.11
24	334.81	335.75	338.51	337.84	339.83	344.81	344.56	339.01	337.74	335.00	331.31	335.01
25	334.70	335.17	340.41	337.71	339.53	344.96	344.68	338.91	337.41	334.93	331.41	335.37
26	334.75	337.06	340.11	337.61	339.56	345.11	344.81	338.61	337.01	334.88	331.71	335.66
27	334.40	337.01	339.71	338.51	339.81	345.16	345.01	338.61	336.81	334.91	331.86	335.63
28	334.60	337.01	339.11	339.00	340.13	345.21	344.86	338.41	336.76	334.81	331.51	335.78
29	334.71	337.31	338.91	340.10	341.21	345.36	344.31	338.06	336.51	334.81	331.26	335.80
30	334.79		339.01	.....	342.01	345.41	343.91	337.86	336.50	335.06	331.31	335.81
31	.....		338.86		341.71		343.41	337.76		335.61		335.86

Missouri River.—Fort Leavenworth, Kan., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	335.62	334.76	336.92	338.72	339.16	343.49	347.76	340.99	337.74	335.40	334.69	334.98
2	335.86	334.72	337.12	340.62	339.11	344.62	348.06	340.72	337.86	335.38	334.62	334.57
3	335.76	334.71	337.20	342.76	339.06	345.22	348.45	340.52	337.65	335.30	334.57	334.22
4	335.81	334.62	337.29	342.63	339.42	345.03	348.67	340.42	337.37	335.23	334.49	333.44
5	335.81	334.74	337.22	341.92	340.02	345.37	348.79	340.25	337.21	335.23	334.47	332.64
6	335.81	333.92	337.23	341.27	340.22	346.15	348.79	340.16	337.17	335.28	334.42	332.17
7	335.81	335.30	336.07	340.84	340.07	345.97	348.72	340.04	337.12	335.24	334.42	332.07
8	335.76	336.02	336.00	340.49	339.97	345.27	348.55	339.96	336.87	335.22	334.41	331.97
9	335.81	336.47	335.37	340.39	339.77	346.09	347.62	340.05	336.72	335.13	334.37	331.87
10	335.81	336.96	334.97	342.72	339.58	345.57	347.12	339.99	336.65	334.95	334.36	331.52
11	335.81	337.36	335.19	344.22	339.42	346.35	345.72	339.67	336.58	334.91	334.34	331.92
12	335.86	337.39	336.77	344.72	339.45	346.56	346.23	339.39	336.55	334.91	334.35	332.22
13	336.01	337.17	336.74	345.02	339.47	346.47	345.72	339.37	336.42	334.86	334.37	331.72
14	336.01	337.07	337.04	344.82	339.33	346.30	345.24	339.13	336.40	334.86	334.36	331.62
15	336.01	336.99	338.72	343.61	338.92	346.22	344.78	339.12	336.20	334.78	334.28	331.78
16	335.91	337.07	339.22	343.18	338.72	346.18	344.46	338.77	336.09	334.75	334.22	331.75
17	335.91	337.11	338.36	341.56	338.47	346.00	344.36	338.77	336.02	334.77	334.62	331.77
18	335.91	337.15	338.10	341.13	338.72	346.07	344.09	338.77	335.97	334.75	334.58	331.98
19	336.06	337.10	338.42	340.41	338.77	346.32	344.12	338.81	335.84	334.72	334.12	332.04
20	336.12	337.02	338.00	339.72	338.68	346.64	343.97	338.60	335.77	334.72	334.12	331.98
21	336.12	337.00	337.92	339.22	339.25	346.81	343.65	338.43	335.72	334.72	334.09	332.02
22	335.42	336.92	338.52	339.07	340.42	346.72	343.39	338.27	335.67	334.72	334.14	331.86
23	335.37	336.97	338.07	339.64	340.63	346.74	343.22	338.11	335.59	334.72	334.32	331.68
24	335.37	336.56	337.77	339.64	340.68	346.80	342.94	338.00	335.59	334.72	334.97	331.87
25	335.58	336.37	337.72	339.72	342.22	347.26	342.62	337.86	335.62	334.71	334.77	331.70
26	335.56	336.74	337.73	339.77	341.62	347.62	342.42	337.76	335.47	334.69	334.96	332.22
27	335.42	336.74	337.76	340.27	341.78	347.61	342.82	337.65	335.41	334.68	334.97	332.30
28	335.14	336.79	337.67	339.90	343.82	347.67	342.82	337.56	335.41	334.72	334.99	332.37
29	334.87		337.67	339.42	343.32	347.52	342.27	337.49	335.40	334.59	334.77	332.41
30	334.90		336.56	339.20	342.90	347.72	341.72	337.51	335.40	334.62	334.67	332.21
31	334.82		336.37		342.96		341.37	337.57		334.58		332.32

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	332.70	339.07	333.92	337.71	337.82	337.49	342.48	338.18	336.97	335.24	334.50	331.92
2	332.48	338.91	333.82	337.35	337.81	337.32	342.70	338.07	336.62	335.14	334.52	331.90
3	332.87	338.67	333.75	337.12	337.67	337.17	342.45	337.98	336.16	334.97	334.57	332.27
4	331.92	338.40	335.42	336.89	337.52	337.07	342.22	337.82	335.98	334.92	334.53	332.62
5	332.62	338.10	335.45	336.79	337.30	338.96	342.47	337.57	336.02	334.87	334.66	332.69
6	331.35	338.09	335.67	336.54	337.00	341.12	342.87	337.39	335.88	334.77	334.72	332.83
7	331.72	337.65	335.67	336.18	336.81	342.22	343.26	337.32	335.73	334.69	334.62	332.77
8	332.17	337.65	335.55	336.03	336.62	343.77	343.38	337.24	335.73	334.64	334.74	333.02
9	332.78	337.67	335.52	335.92	336.50	344.47	343.68	337.12	335.47	334.68	334.72	333.07
10	333.01	337.19	335.62	335.93	336.67	344.44	343.01	337.03	335.38	334.52	334.66	333.24
11	333.23	337.17	335.70	335.83	337.15	343.74	342.33	336.98	335.37	334.47	334.62	333.54
12	332.82	337.17	335.52	335.72	337.54	343.68	341.53	336.77	335.44	334.39	334.59	333.99
13	332.85	336.71	335.59	335.62	337.17	343.62	340.92	336.80	335.60	334.36	334.57	334.17
14	332.60	336.58	335.59	335.59	336.78	345.03	340.57	337.03	335.87	334.34	334.52	333.99
15	332.03	336.71	335.46	335.56	336.27	344.97	340.36	336.95	335.92	334.38	334.47	333.72
16	333.41	336.27	335.23	335.47	336.12	345.24	339.96	336.87	335.98	334.39	334.51	333.67
17	333.22	336.18	335.17	335.45	336.12	345.62	339.72	336.81	335.99	334.40	334.47	333.32
18	333.70	335.71	335.36	335.42	336.07	345.57	339.63	336.70	335.99	334.41	334.47	333.02
19	333.83	335.67	337.01	335.47	335.93	345.62	339.57	338.60	336.07	334.41	334.46	332.72
20	334.33	335.14	337.59	335.52	336.04	345.51	339.49	336.35	335.75	334.43	334.52	332.47
21	333.93	334.45	337.97	335.58	336.34	345.62	339.47	336.17	335.69	334.49	334.57	332.47
22	334.47	335.13	338.87	335.72	336.66	345.22	339.37	336.03	335.64	334.52	333.62	332.32
23	335.57	335.34	339.37	335.85	336.48	344.10	339.43	335.92	335.54	334.57	333.47	334.12
24	336.37	334.76	340.07	338.72	337.72	343.60	339.46	335.87	335.47	334.51	333.22	331.92
25	336.32	334.72	340.37	339.17	338.92	343.26	339.45	335.81	335.47	334.62	332.62	331.94
26	336.17	334.25	339.97	339.09	338.81	342.77	339.37	336.80	335.55	334.47	332.57	332.02
27	336.26	334.12	339.37	337.56	338.52	342.72	339.03	338.62	335.52	334.42	332.42	332.12
28	336.30	333.87	339.07	338.10	338.27	342.72	338.82	338.69	335.46	334.42	332.42	332.38
29	335.75		338.64	337.86	337.98	342.46	338.64	338.11	335.43	334.42	332.02	332.48
30	335.60		338.22	337.72	337.77	342.41	338.47	337.57	335.36	334.49	331.90	332.42
31	337.00		338.04	337.72	337.72		338.30	337.25		.....		332.97

Missouri River.—Fort Leavenworth, Kan., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	331.72	333.82	334.72	340.62	346.82	340.42	346.22	342.15	340.20	338.20	336.30	332.03
2	332.02	334.07	334.72	340.09	346.17	341.22	346.52	342.15	340.14	338.08	335.95	332.92
3	332.72	334.07	334.42	338.97	345.42	342.57	345.02	341.94	340.30	338.02	335.92	332.65
4	333.32	333.72	334.17	338.42	345.02	343.52	345.42	341.72	340.44	337.76	335.92	332.92
5	334.02	333.47	334.22	338.62	344.62	343.12	345.82	341.42	340.50	337.65	335.87	333.57
6	334.07	333.37	334.72	339.22	343.92	343.27	345.37	341.52	340.62	337.67	335.82	333.97
7	334.17	333.37	334.52	340.52	343.17	343.32	345.17	340.97	343.32	337.51	335.77	334.57
8	334.42	333.35	334.62	340.47	342.72	343.57	345.12	340.57	343.02	337.51	335.72	334.42
9	334.42	333.32	334.72	340.83	342.37	343.37	344.92	340.25	342.52	337.42	335.67	333.97
10	334.12	333.22	334.87	341.15	342.02	343.02	344.72	339.97	342.07	337.37	335.72	333.12
11	334.12	333.42	335.07	341.72	341.62	342.67	344.82	339.82	341.89	337.17	335.72	332.70
12	334.12	333.37	335.12	342.22	341.37	342.42	344.77	339.89	341.72	336.98	335.67	333.02
13	334.12	333.37	335.22	341.42	340.92	342.22	345.02	339.92	341.47	336.87	335.67	334.02
14	334.22	333.22	333.72	341.12	340.62	342.02	344.82	339.89	341.05	336.77	335.72	334.02
15	333.92	333.22	333.62	340.72	340.52	341.72	344.82	339.82	340.91	336.67	335.67	334.02
16	333.87	333.19	333.52	340.83	340.52	341.47	344.47	338.60	340.79	336.67	335.67	334.32
17	333.67	333.22	333.47	342.42	340.62	341.27	343.97	339.32	340.72	336.50	335.67	334.22
18	333.57	333.12	333.42	342.27	340.12	340.77	343.52	339.22	340.77	336.50	335.57	334.22
19	333.22	333.07	333.47	341.52	340.32	341.32	343.77	338.99	340.67	336.50	335.42	332.77
20	333.07	333.02	334.39	340.87	340.32	341.42	343.42	338.94	340.62	336.42	335.22	333.32
21	333.12	333.17	334.42	340.47	340.22	342.62	343.02	338.93	340.37	336.32	335.07	334.02
22	333.32	333.27	334.22	340.72	339.87	342.77	342.52	338.69	340.08	336.12	334.82	334.87
23	333.72	333.37	335.27	341.22	340.02	344.22	342.25	338.55	339.72	336.05	334.52	334.42
24	334.12	333.67	335.12	343.22	340.12	344.12	342.02	338.39	339.54	336.07	334.22	334.57
25	334.07	333.72	335.07	344.82	339.87	345.02	341.97	338.47	339.37	336.02	333.62	334.87
26	334.09	333.75	335.47	345.57	339.72	345.12	342.12	338.29	339.17	335.97	332.72	334.97
27	334.07	333.82	335.92	346.32	339.72	346.02	341.82	338.37	339.02	335.97	332.72	334.87
28	333.87	333.82	337.42	347.07	339.82	346.32	342.22	338.90	338.75	335.97	332.67	334.77
29	333.72		337.87	347.32	340.37	346.72	342.02	338.72	338.55	335.92	332.64	334.72
30	333.72		338.07	347.42	340.17	346.62	342.17	339.77	338.27	335.87	331.97	334.42
31	333.72		338.42		340.22			.....				

Missouri River.—Fort Leavenworth, Kan., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	335.17	333.17	334.67	339.47	339.87	341.10	345.72	340.94	338.32	338.57	336.82	334.12
2	335.77	332.27	334.24	340.12	339.62	340.97	345.82	340.77	338.49	338.57	337.07	332.22
3	335.42	333.74	333.97	340.70	339.40	341.42	345.82	340.52	338.77	338.42	337.27	332.12
4	335.02	334.92	334.02	340.49	339.25	342.24	346.02	340.27	339.25	338.22	337.29	332.22
5	334.77	334.87	333.97	339.97	339.71	342.77	346.22	340.02	339.15	337.97	337.07	331.97
6	334.70	334.94	334.02	339.88	340.52	342.48	346.42	339.92	339.62	337.82	336.87	331.77
7	334.70	335.07	334.10	340.15	341.02	342.77	345.92	339.77	340.52	337.67	336.94	331.87
8	334.67	335.50	334.92	340.17	341.45	343.67	345.42	339.92	340.47	337.52	336.97	332.17
9	334.67	335.52	335.37	339.87	341.12	344.22	345.32	339.90	340.45	337.42	336.84	332.32
10	334.75	335.42	337.12	339.75	341.02	344.12	345.37	339.92	340.62	337.37	336.67	335.17
11	334.73	335.22	336.67	339.90	341.05	344.62	345.37	340.47	340.47	337.22	336.47	335.62
12	333.87	334.62	336.70	340.17	340.67	345.67	344.87	340.42	340.62	337.07	336.22	335.80
13	332.82	335.17	336.12	340.37	340.05	345.77	344.62	340.12	340.58	336.97	335.97	333.72
14	332.62	334.92	335.57	340.47	339.62	345.97	344.57	339.77	341.08	336.92	335.82	333.22
15	332.77	334.52	336.22	343.22	339.25	345.97	343.92	339.59	341.48	336.82	336.22	332.97
16	334.22	334.32	335.27	344.07	338.84	345.67	343.47	339.57	341.49	336.70	336.02	332.92
17	335.17	334.22	337.76	345.12	338.84	345.57	343.54	340.12	341.02	336.70	335.77	332.82
18	335.37	334.19	338.77	344.62	338.70	345.42	343.37	339.54	340.62	336.67	335.67	332.77
19	335.87	334.27	338.32	343.62	338.79	345.22	343.27	339.54	340.37	336.22	335.57	335.77
20	335.47	334.47	337.77	342.84	338.62	345.67	343.22	339.62	340.22	336.22	335.47	337.97
21	334.97	334.67	337.62	342.34	338.50	345.67	342.87	340.22	340.12	336.47	335.32	339.02
22	334.82	334.77	337.26	341.85	338.45	345.77	342.92	340.70	340.10	336.27	335.12	339.52
23	334.77	335.07	336.72	342.22	338.47	345.67	342.67	340.32	340.42	336.22	335.02	339.12
24	334.47	335.14	336.67	341.97	338.47	345.62	342.40	340.40	339.84	336.27	334.92	338.92
25	333.74	334.98	336.57	342.02	338.37	344.92	342.17	340.22	339.90	336.47	334.72	338.92
26	333.52	334.87	336.27	341.67	338.30	344.52	341.92	340.02	339.92	336.82	334.47	339.02
27	333.32	334.76	336.42	341.50	338.77	344.62	341.92	339.48	339.52	336.84	334.22	339.02
28	335.22	334.67	336.62	341.37	339.07	345.12	341.82	338.92	339.17	337.07	334.12	339.07
29	334.77	334.74	338.62	340.87	340.87	345.47	341.75	338.57	338.82	337.05	334.17	338.97
30	334.52		338.97	338.22	341.12	345.62	341.44	338.32	338.68	336.87	334.32	338.92
31	333.62		339.00		341.38		341.17	.....		336.77		339.02

Missouri River.—Fort Leavenworth, Kan., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	339.42	337.47	337.40	338.77	342.17	346.47	347.72	341.72	337.77	335.47	335.97	333.72
2	339.27	337.42	337.32	339.42	341.92	345.97	347.62	341.72	337.66	335.47	335.97	333.42
3	339.22	337.37	337.22	339.42	341.32	345.47	347.62	341.59	337.57	335.42	335.92	333.47
4	339.12	337.42	337.12	339.07	341.22	345.47	347.52	341.52	337.46	335.42	336.02	333.52
5	339.22	337.67	337.07	338.97	340.72	345.42	347.22	341.42	337.32	335.42	336.12	333.52
6	339.27	337.97	337.02	339.42	340.62	345.32	346.77	341.32	337.17	335.37	336.12	333.62
7	339.27	338.22	336.97	342.92	340.52	345.07	346.32	341.32	337.04	335.37	336.02	.....
8	339.22	338.57	336.92	344.92	340.67	346.22	345.62	341.47	336.82	335.37	336.02	.....
9	339.27	340.02	336.47	345.07	340.74	346.67	345.52	341.72	336.79	335.37	336.07	.....
10	338.67	337.22	334.62	344.57	340.62	347.82	345.82	341.47	337.42	335.37	336.12	.....
11	338.62	337.77	334.57	343.32	340.87	348.42	345.92	341.17	336.95	335.52	336.07	.....
12	338.47	338.22	334.87	342.42	341.07	348.82	345.42	340.67	336.93	335.62	336.02	.....
13	338.32	337.22	334.52	341.87	341.17	348.92	344.82	340.32	336.92	335.57	335.72	.....
14	338.22	336.97	334.82	341.47	341.37	348.77	344.22	340.14	336.92	335.52	335.72	.....
15	338.22	336.82	335.62	341.42	341.67	348.67	343.70	340.02	336.72	335.32	335.72	.....
16	338.22	336.67	336.77	341.37	341.78	348.77	343.62	339.87	336.77	335.52	335.72	.....
17	338.22	336.69	336.82	341.47	342.17	348.67	343.82	339.59	336.75	335.57	336.02	.....
18	338.17	336.69	338.77	341.47	342.06	348.12	344.62	339.34	336.67	335.72	336.12	.....
19	338.07	337.62	338.02	342.17	342.77	347.32	344.62	339.22	336.57	336.02	336.02	.....
20	338.07	337.52	337.77	342.12	343.77	346.62	344.52	338.97	336.50	336.42	335.92	.....
21	338.07	337.47	337.57	341.92	344.22	346.42	344.47	339.17	336.12	336.89	335.82	.....
22	337.97	337.17	337.57	341.52	343.97	345.82	344.42	339.17	336.02	337.57	335.72	.....
23	337.87	337.57	337.52	341.97	343.62	345.52	344.32	339.02	335.92	337.22	335.72	.....
24	337.82	338.32	337.92	342.42	343.42	345.22	344.17	338.72	335.82	337.27	335.72	.....
25	337.72	338.32	338.07	342.37	343.42	345.17	343.82	338.52	335.72	336.97	335.77	.....
26	337.66	337.67	337.97	341.80	343.07	346.02	343.32	338.52	335.62	336.87	335.77	.....
27	337.66	337.37	338.02	341.92	342.87	346.22	342.77	338.52	335.57	336.72	336.02	.....
28	340.62	337.34	338.12	341.67	343.07	346.77	342.42	338.42	335.57	336.57	336.12	.....
29	337.57		338.17	341.92	345.02	347.07	342.22	338.27	335.57	336.32	336.22	.....
30	337.47		338.22	341.94	346.02	347.32	342.05	337.92	335.62	336.02	335.72	.....
31	337.49		338.37		346.42		341.77	337.75		335.97		.....

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1							347.72	344.32	338.22	336.77	335.62	335.47
2							348.67	344.12	338.14	336.72	335.62	335.47
3							348.62	343.97	338.09	336.62	335.57	335.42
4							348.52	343.22	338.03	336.57	335.57	335.42
5						346.72	348.37	342.97	337.87	336.62	335.57	335.32
6						347.12	348.12	342.87	337.82	336.52	335.62	335.42
7	332.97	....	....	....	....	347.72	347.62	342.67	337.87	336.42	335.59	335.42
8	332.67	....	....	....	....	348.02	347.27	342.27	337.82	336.32	335.50	335.42
9						348.22	347.02	342.27	338.12	336.22	335.47	335.42
10	332.12	....	....	....	....	348.32	347.02	342.52	337.99	336.22	335.57	335.42
11	332.22	....	....	....	....	348.42	346.97	341.97	338.22	336.42	335.42	335.42
12	332.52	....	....	....	....	348.42	347.27	341.82	338.37	336.27	335.47	335.42
13							347.32	341.37	338.22	336.12	335.52	335.42
14							346.72	340.97	338.09	336.07	335.60	335.37
15							345.97	341.12	337.99	336.02	335.62	334.22
16							345.52	340.92	337.94	336.07	335.67	333.72
17							345.22	340.72	337.84	336.07	335.77	333.72
18							345.22	340.34	337.72	335.92	335.87	333.32
19							345.27	340.12	337.47	335.97	335.92	335.72
20							345.02	339.87	337.37	335.82	335.87	335.57
21							344.97	339.72	337.25	335.77	335.77	335.22
22							344.52	339.52	337.27	335.72	335.72	334.62
23							344.12	339.72	337.14	335.67	335.72	333.82
24							343.82	339.57	337.04	335.67	335.67	334.32
25							343.72	339.19	336.97	335.67	335.52	334.02
26							343.92	339.12	337.27	335.62	335.62	334.22
27						348.42	344.22	339.02	337.24	335.57	335.57	334.52
28						348.47	345.62	339.34	337.27	335.52	335.52	334.52
29						348.47	345.52	338.52	337.12	335.62	335.57	334.57
30					344.62	....	344.92	338.42	336.92	335.52	335.37	334.92
31							344.32	338.33	....	335.57	....	....

Missouri River.—Fort Leavenworth, Kan., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	335.22	335.92	333.32	339.02	338.82	341.82	346.42	342.42	336.82	334.72	334.02	334.77
2	335.17	335.97	334.32	339.02	338.92	340.57	346.27	342.57	336.72	334.72	334.02	334.77
3	335.17	335.97	334.42	339.97	339.52	341.77	345.97	342.82	336.64	334.74	334.02	334.42
4	335.17	336.07	334.42	339.97	339.72	342.22	346.32	342.57	336.47	334.62	334.12	334.02
5	334.92	336.17	334.72	339.02	340.02	342.42	345.67	342.22	336.47	334.62	334.17	334.07
6	334.27	336.27	334.97	340.92	339.92	342.32	345.67	341.92	336.26	334.57	334.22	333.94
7	334.82	336.27	335.22	342.72	340.17	342.07	345.42	339.52	336.14	334.62	334.42	334.32
8	334.62	336.07	335.22	344.27	339.82	342.27	345.42	340.82	336.15	334.62	334.52	334.12
9	334.67	335.97	335.52	344.72	339.72	342.47	345.12	340.52	335.97	334.62	335.20	334.52
10	334.57	335.80	336.52	344.82	339.72	342.32	344.02	340.17	335.82	334.52	335.22	334.22
11	334.52	335.12	337.82	345.22	339.87	342.22	343.92	339.87	335.79	334.42	335.34	333.92
12	334.42	334.82	337.22	343.72	339.92	342.12	343.92	339.67	335.83	334.42	337.12	333.62
13	334.32	334.62	337.22	342.97	339.77	342.17	343.72	340.44	335.78	334.62	336.62	333.42
14	334.70	334.52	337.62	342.07	339.77	342.52	343.42	339.22	335.69	334.39	337.12	333.32
15	334.82	334.32	337.97	341.57	339.87	342.67	343.02	338.97	335.62	334.37	337.44	333.12
16	334.77	334.02	337.69	341.22	339.72	343.92	342.72	338.87	335.42	334.57	337.22	332.77
17	334.82	334.27	337.37	340.82	339.72	344.32	342.62	338.72	335.22	335.12	336.72	333.02
18	334.92	333.97	336.87	340.57	340.22	345.07	342.62	338.67	335.22	335.12	336.52	332.47
19	334.92	333.92	336.80	340.22	340.17	344.97	342.47	338.47	335.17	334.92	336.37	332.54
20	334.92	333.82	336.37	340.12	340.07	344.62	342.52	338.17	335.07	334.82	335.97	332.97
21	334.97	333.82	336.37	340.02	339.97	343.92	342.42	338.17	335.02	334.57	335.67	333.12
22	335.07	333.92	335.72	339.72	339.97	343.82	342.27	337.97	334.89	334.37	335.37	333.12
23	335.07	333.97	336.10	339.57	340.07	344.57	342.67	337.77	334.78	334.17	335.22	333.42
24	335.07	333.97	336.52	339.47	340.39	345.32	342.47	337.69	334.72	334.17	335.02	332.97
25	335.07	333.92	335.77	339.37	340.55	.....	342.27	337.62	334.67	334.17	334.97	332.52
26	335.12	333.97	335.72	339.27	340.82	345.82	342.27	337.49	334.67	334.07	334.87	333.22
27	335.22	333.42	335.62	339.22	339.87	346.32	342.19	337.37	334.62	334.07	334.95	333.32
28	335.32	333.07	338.22	339.17	340.62	346.32	341.97	337.32	334.62	334.02	334.95	333.22
29	335.37		339.22	339.07	340.72	346.42	342.02	337.15	334.62	334.02	334.90	333.20
30	335.32		339.67	339.07	340.72	346.52	342.24	337.07	334.72	334.02	334.97	333.12
31	.....		339.49	339.07	341.82		342.42	336.97		334.02		333.22

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	333.37	331.47	335.92	334.72	337.02	338.82	344.37	341.72	339.97	336.72	335.02	333.32
2	333.52	331.12	335.07	335.32	337.17	338.57	344.92	341.62	339.72	336.62	335.25	333.72
3	333.62	331.57	334.12	336.07	337.30	338.45	345.22	341.57	340.32	336.57	334.95	333.07
4	334.12	332.02	332.82	336.42	337.49	339.57	345.17	341.62	340.77	336.42	334.92	333.32
5	334.17	331.97	332.92	336.32	337.47	339.80	345.27	341.47	341.30	336.32	334.97	334.12
6	333.42	331.82	334.22	336.92	337.22	341.12	345.32	341.32	341.32	336.47	335.07	334.92
7	333.82	332.02	334.72	342.92	337.12	341.72	345.52	341.27	341.57	336.27	335.02	335.22
8	333.97	332.77	334.67	343.72	336.82	341.77	345.72	341.22	340.87	336.12	335.02	335.52
9	333.47	332.92	334.62	342.52	336.67	341.22	345.97	341.22	339.32	336.02	335.05	335.17
10	333.67	333.07	334.32	341.47	336.57	341.52	346.07	341.22	339.02	335.72	335.12	335.27
11	333.27	333.07	334.42	340.52	336.67	340.92	346.22	341.22	338.77	335.57	335.17	335.47
12	333.17	333.22	334.67	340.27	336.72	340.82	346.12	340.82	338.57	335.57	335.27	335.52
13	333.67	334.72	334.92	339.97	336.79	341.62	345.87	340.42	338.47	335.47	335.37	335.47
14	333.02	334.62	334.67	339.47	336.74	341.02	345.72	339.92	338.35	336.17	335.32	335.37
15	333.02	334.22	333.82	338.89	336.67	341.12	346.17	339.77	338.18	336.17	335.27	335.37
16	332.87	333.87	333.07	338.42	336.64	341.22	345.82	339.52	337.87	336.12	335.32	335.32
17	332.72	333.82	332.32	338.32	336.70	343.22	345.62	339.32	337.67	336.22	335.17	335.37
18	332.77	334.02	332.32	338.12	336.70	343.12	345.57	339.12	337.52	336.22	334.77	336.22
19	332.87	334.12	332.02	337.62	336.52	343.02	345.42	338.95	337.29	336.37	334.17	335.92
20	332.97	334.72	332.12	337.17	336.44	343.00	345.32	338.82	337.32	336.14	334.07	335.67
21	333.17	334.92	333.17	337.22	336.32	343.42	345.32	338.92	337.29	336.17	332.67	335.57
22	333.22	334.22	332.77	337.07	336.37	344.42	345.47	338.92	337.27	336.05	332.37	335.67
23	333.37	334.12	332.82	337.00	336.42	344.37	345.42	338.97	337.07	335.87	332.27	335.77
24	333.22	334.07	333.32	338.72	336.72	344.12	344.82	339.62	336.97	335.77	332.02	335.97
25	333.17	334.22	335.82	339.02	336.62	343.82	343.87	340.22	336.97	335.67	331.82	336.17
26	333.17	334.27	336.97	338.67	336.70	343.57	343.32	339.92	336.82	335.54	330.27	336.22
27	333.07	334.32	337.07	338.17	338.07	343.52	342.72	339.52	337.12	335.52	331.52	335.17
28	333.22	335.87	336.42	337.72	338.67	343.72	342.37	339.42	337.22	335.40	332.07	334.87
29	332.97	336.67	336.12	337.22	338.97	343.67	342.12	340.22	337.17	335.34	332.37	334.62
30	333.22		336.17	337.12	339.27	343.92	341.82	340.12	336.90	335.27	332.32	335.22
31	332.82		335.92	337.12	339.17		341.92	339.97		335.12		335.72

Missouri River.—Fort Leavenworth, Kas., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	335.87	336.12	337.27	345.67	355.82	345.22	345.82	339.72	336.62	336.12	337.82	.....
2	335.92	336.02	337.82	345.32	354.87	345.72	346.12	339.82	336.42	336.27	337.82	.....
3	335.92	335.83	338.22	345.32	353.17	345.82	345.82	339.62	336.57	336.37	337.97	.....
4	335.87	335.67	337.92	345.32	350.32	345.62	345.22	339.57	336.47	336.47	338.07	.....
5	335.87	335.42	337.97	346.02	347.27	345.22	344.72	339.32	336.27	336.27	337.92	.....
6	335.87	337.02	338.05	346.32	346.22	344.92	344.32	339.02	336.42	336.52	337.82	.....
7	335.82	337.52	338.07	346.82	345.52	344.72	343.47	338.92	336.37	336.62	337.82	.....
8	335.82	337.62	337.97	347.12	344.92	344.32	342.97	338.82	336.42	336.67	337.82	.....
9	335.82	338.52	337.42	347.72	344.62	344.62	342.52	338.62	336.52	336.52	337.97	.....
10	335.77	338.42	337.62	348.47	344.62	344.67	342.02	338.47	336.57	336.47	338.22	.....
11	335.77	338.52	339.17	349.02	344.42	344.72	341.82	338.37	336.87	336.72	338.82	.....
12	335.77	338.52	338.92	349.62	344.12	344.72	342.97	338.27	337.62	336.97	338.37	.....
13	335.72	338.37	338.87	350.02	344.12	344.82	343.97	338.22	337.62	336.97	338.22	.....
14	335.67	337.87	340.42	349.72	344.02	344.82	344.12	338.27	337.62	337.22	.....	.....
15	335.72	337.32	340.77	347.92	344.12	345.32	343.92	338.17	337.17	337.22	.....	.....
16	335.72	336.93	341.22	346.52	344.02	346.37	343.97	337.97	337.02	337.22	.....	.....
17	335.62	336.72	340.62	346.12	343.52	346.72	343.62	337.87	337.12	337.12	.....	.....
18	335.87	336.82	340.32	345.82	343.22	346.62	343.47	337.72	337.22	337.37	.....	.....
19	335.77	336.52	339.92	346.12	343.02	346.12	343.12	337.72	337.22	337.57	.....	.....
20	335.77	336.42	339.52	347.22	343.12	345.62	342.37	337.52	337.13	337.38	.....	.....
21	335.72	336.62	339.69	348.12	343.87	345.12	342.12	337.12	337.12	337.22	.....	.....
22	335.67	336.52	339.60	348.82	344.32	344.82	341.82	337.07	337.02	337.07	.....	.....
23	335.67	336.52	339.47	349.72	344.57	344.52	341.62	336.92	336.82	337.02	.....	.....
24	335.67	336.42	339.42	350.37	344.27	344.72	341.22	336.77	336.62	336.97	.....	.....
25	335.72	335.77	339.57	351.78	343.82	344.47	340.62	336.67	336.22	336.92	.....	.....
26	336.12	336.49	340.27	352.62	343.02	344.12	340.22	336.52	336.12	337.02	.....	.....
27	336.27	337.62	340.92	353.72	342.62	344.12	340.12	336.47	336.07	337.12	.....	.....
28	336.27	337.42	341.97	355.52	342.27	344.02	340.02	336.37	335.92	337.22	.....	.....
29	336.22	.....	345.72	356.47	342.52	345.42	339.92	336.32	335.92	337.22	.....	.....
30	336.27	.....	346.62	356.47	342.72	345.42	339.72	336.47	335.82	337.52	.....	.....
31	336.17	.....	345.52	.....	343.97	.....	339.62	336.57	.....	337.72	.....	.....

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1										358.6	357.6	.....
2										358.6	357.6	357.6
3										358.6	.....	357.6
4										358.5	357.6	357.5
5									359.8	358.3	357.6	357.5
6									359.7	.....	357.7	357.5
7									359.8	.....	357.6	.....
8										358.2	357.6	.....
9									359.8	358.1	357.5	.....
10									360.1	358.1	.....	357.3
11									360.7	358.2	357.6	.....
12									360.3	358.0	357.6	.....
13									360.2	357.9	357.7	.....
14									360.1	357.9	357.8	.....
15										357.9	357.8	.....
16									359.9	358.0	357.9	.....
17									359.8	357.9	.....	.....
18									359.6	357.8	358.0	.....
19									359.3	357.8	358.0	.....
20									359.3	.....	358.0	.....
21									359.2	357.6	358.0	.....
22										357.6	358.0	.....
23									359.0	357.6	358.0	.....
24									358.9	357.6	.....	.....
25									359.0	357.6	357.8	.....
26									359.2	357.6	357.8	.....
27									359.3	.....	357.7	.....
28									359.2	357.6	357.7	.....
29										357.5	357.7	.....
30									358.7	357.5	357.6	.....
31										357.6	.....	.....

Missouri River.—Atchison, Kan., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1		357.6	.....	.....	360.8	364.7	369.5	365.4	359.6	357.2	.....	.....
2		357.7	.....	.....	361.2	364.7	369.0	365.7	359.4	357.3	.....	.....
3		357.8	.....	.....	362.0	365.0	368.9	365.6	359.3	357.2	.....	.....
4		357.8	.....	.....	362.2	365.3	369.1	365.2	359.2	357.1	.....	.....
5		357.9	.....	.....	362.2	365.4	368.4	364.9	359.0	357.1	.....	.....
6		358.0	.....	.....	362.4	365.3	368.5	364.9	358.9	357.0	.....	.....
7		358.0	.....	.....	362.6	365.0	368.2	364.4	358.8	357.1	.....	.....
8		358.0	.....	.....	362.3	365.3	367.7	363.7	358.7	357.0	.....	.....
9		357.4	.....	.....	362.3	365.6	367.3	363.2	358.7	356.9	.....	.....
10		357.3	.....	.....	362.3	365.4	366.8	362.9	358.7	356.9	.....	.....
11		356.1	.....	.....	362.3	365.3	366.5	362.7	358.6	356.9	.....	.....
12					362.4	365.1	366.4	362.3	358.5	356.9	.....	.....
13					362.3	364.9	366.2	362.2	358.4	356.9	.....	.....
14					362.3	364.9	365.8	361.9	358.4	356.9	.....	.....
15					362.3	365.4	365.5	361.8	358.1	356.9	.....	.....
16					362.2	365.9	365.3	361.6	357.9	357.1	.....	.....
17				362.8	362.4	367.0	365.2	361.4	357.8	357.3	.....	.....
18				362.5	362.8	367.9	365.0	361.3	357.8	357.4	.....	.....
19				363.1	362.7	368.4	364.9	361.1	357.8	357.4	.....	.....
20				362.0	362.6	368.1	364.7	361.0	357.7	357.3	.....	.....
21				361.9	362.7	367.6	364.5	360.8	357.6	356.9	.....	.....
22				361.7	362.6	366.9	365.5	360.7	357.5	356.7	.....	.....
23				361.5	362.7	366.9	365.3	360.6	357.3	356.6	.....	.....
24				361.5	362.8	367.8	365.0	360.5	357.2	356.5	.....	.....
25				361.4	363.0	368.7	364.8	360.3	357.2	356.3	.....	.....
26				362.1	363.4	368.8	364.8	360.1	357.1	356.3	.....	.....
27				361.3	363.5	369.1	364.8	360.1	357.1	356.3	.....	.....
28				361.2	363.6	369.3	364.8	360.0	357.1	.....	.....	.....
29				361.1	363.6	369.5	364.8	359.8	357.0	.....	.....	.....
30	357.5	.....	.....	361.0	364.4	369.5	365.2	359.8	357.1	.....	.....	.....
31	357.6	.....	.....	.....	364.8	.....	365.3	359.7	.....	.....	.....	.....

Missouri River.—Atchison, Kan., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1			359.0	357.4	359.6	361.4	367.3	364.3	362.1	358.9	356.8	355.9
2			356.9	357.9	359.7	361.2	367.8	364.3	362.1	358.8	356.8	355.6
3			355.7	358.6	359.9	361.6	368.0	364.3	362.8	358.7	356.8	355.9
4			354.8	358.8	360.1	362.4	368.0	364.2	363.2	358.4	356.8	355.8
5			356.8	358.7	360.0	362.5	368.1	364.0	363.6	358.4	356.9	356.2
6			356.7	362.3	359.7	364.3	368.1	363.8	363.3	358.3	357.0	357.0
7			356.9	366.8	359.2	364.6	368.4	363.8	362.5	358.1	356.9	356.8
8			356.8	366.3	359.2	364.4	368.7	363.7	361.9	357.9	356.8	357.0
9			356.5	365.0	359.2	363.8	368.8	363.6	361.5	357.8	356.8	356.6
10			356.5	364.0	359.3	364.1	368.9	363.6	361.3	357.7	356.8	357.0
11			356.7	363.2	359.3	364.1	368.9	363.5	361.0	357.6	356.8	356.9
12			356.9	362.9	359.3	363.4	368.6	363.0	360.8	357.8	356.9	356.9
13			357.2	362.5	359.3	363.5	368.5	362.7	360.8	357.9	357.0	356.9
14			356.8	361.9	359.2	363.7	368.5	362.4	360.7	358.2	356.9	356.9
15			355.3	361.6	359.2	363.6	368.7	362.1	360.4	358.1	357.2	357.0
16			354.4	361.3	359.3	364.3	368.4	361.8	360.2	358.3	357.1	357.0
17		356.4	353.9	361.0	359.2	365.9	368.3	361.6	359.9	358.3	357.0	357.0
18		356.6	353.8	360.4	359.1	365.6	368.1	361.5	359.8	358.3	356.1	357.0
19		356.9	354.0	359.8	358.9	365.6	368.2	361.3	359.6	358.3	355.2	356.8
20		356.7	354.9	359.6	358.8	365.6	368.1	361.3	359.6	358.2	354.3	356.6
21		356.6	354.7	359.6	358.8	366.0	368.1	361.3	359.8	358.3	354.0	356.5
22		356.3	354.6	359.6	358.8	367.1	368.1	361.3	359.6	358.1	353.4	356.7
23		356.3	355.0	360.3	359.1	367.0	367.8	361.5	359.4	357.9	352.9	356.9
24		356.3	356.9	361.7	359.3	366.6	367.0	362.2	359.3	357.8	.....	357.3
25		356.3	359.0	361.7	359.2	366.6	366.1	362.5	359.3	357.5	.....	357.2
26		357.1	359.2	361.2	360.3	366.0	365.6	362.0	359.3	357.4	.....	357.1
27		358.8	358.8	360.3	361.3	366.1	365.2	361.8	359.4	357.3	352.8	357.1
28		359.1	358.2	360.1	361.7	366.4	364.8	362.0	359.5	357.3	354.1	357.1
29		358.9	358.1	359.7	362.0	366.5	364.5	362.6	359.3	357.2	354.3	357.2
30			358.4	359.5	362.2	366.8	364.4	362.4	359.1	357.1	355.4	357.5
31			357.8	.....	361.7	.....	364.4	362.3	.....	356.9	.....	358.0

Missouri River.—Atchison, Kas., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	358.1	358.8	360.2	368.4	375.5	367.4	368.0	361.3	357.2	357.1	359.0	356.9
2	358.1	358.9	360.6	367.0	374.6	367.8	367.6	361.2	357.4	357.2	359.1	357.1
3	358.1	358.9	360.5	366.9	372.9	367.7	367.5	361.0	357.4	357.3	359.4	357.0
4	358.2	358.9	360.6	367.9	370.9	367.3	366.9	360.8	357.3	357.4	359.3	356.7
5	358.3	358.9	360.7	368.8	368.6	367.1	366.3	360.6	357.3	357.4	359.1	356.4
6	358.3	360.3	360.7	369.3	367.3	366.8	365.6	360.5	357.4	357.4	359.1	356.3
7	358.3	360.4	360.4	369.6	366.6	366.3	364.9	360.6	357.4	357.5	359.1	356.5
8	358.3	360.7	360.2	369.8	366.1	366.3	364.5	360.4	357.5	357.5	359.2	356.5
9	358.3	361.0	359.9	370.2	366.0	366.6	364.5	360.0	357.4	357.4	359.5	356.4
10	358.4	361.3	359.9	371.0	366.0	366.7	364.5	359.8	357.4	357.5	359.5	356.3
11	358.4	361.3	360.8	371.7	365.7	366.7	364.9	359.6	357.6	357.6	359.7	356.4
12	358.4	361.3	361.0	372.2	365.5	366.7	365.4	359.5	358.3	358.1	359.5	356.4
13	358.4	360.6	362.3	372.4	365.6	366.9	365.6	359.4	358.7	357.9	359.4	356.4
14	358.4	360.2	363.5	371.6	365.6	367.1	365.4	359.4	358.7	358.4	359.3	356.3
15	358.4	360.0	366.1	369.9	365.6	367.7	365.3	359.2	358.4	358.1	359.2	356.3
16	358.4	360.0	363.3	369.2	365.2	368.7	365.2	359.0	358.3	358.1	359.0	356.3
17	358.4	360.0	363.5	368.9	365.0	368.9	364.9	358.9	358.3	358.4	358.9	356.4
18	358.4	360.0	363.2	368.8	364.7	368.8	364.6	358.9	358.3	358.4	358.8	356.4
19	358.4	359.8	362.6	369.7	364.5	368.2	363.9	358.7	358.2	358.6	358.8	356.3
20	358.4	359.8	362.7	371.0	364.9	367.6	363.6	358.4	358.2	358.4	358.6	356.2
21	358.4	359.7	362.5	371.6	365.9	367.1	363.6	358.3	358.1	358.3	357.2	356.5
22	358.4	359.4	362.7	372.1	366.3	367.0	363.5	358.1	357.9	358.1	357.1	356.7
23	358.4	359.3	362.4	372.6	366.3	366.6	363.2	357.9	357.6	358.2	356.5	356.9
24	358.4	359.2	362.7	373.1	365.8	366.8	362.7	357.6	357.3	358.2	356.1	357.1
25	358.4	359.1	362.6	373.5	365.2	366.5	362.3	357.6	357.1	358.3	355.5	357.1
26	358.4	359.6	363.6	374.1	364.7	366.0	362.1	357.4	357.0	358.3	354.8	357.0
27	358.4	360.3	364.3	374.9	364.5	366.4	362.1	357.3	356.9	358.3	355.8	357.0
28	358.4	360.0	365.7	375.8	364.4	367.3	362.0	357.3	356.8	358.3	356.0	356.9
29	358.6		369.0	376.2	364.5	367.4	361.7	357.2	356.8	358.5	357.2	356.8
30	358.8		368.6	376.1	365.2	367.4	361.3	357.3	356.8	358.9	357.0	356.7
31	358.8		368.0		366.4		361.3	357.2		359.0		356.6

Missouri River.—Atchison, Kan., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	356.2	354.1	356.0	356.8	360.8	362.9	368.6	362.3	358.2	356.4	357.2	355.4
2	354.1	354.7	357.7	357.1	361.6	362.3	368.8	362.2	358.1	356.4	357.2	355.3
3	353.7	354.9	358.3	357.8	361.5	362.0	368.7	362.0	358.0	356.4	357.1	355.2
4	353.0	355.0	358.7	357.8	361.1	361.9	368.6	361.7	358.0	356.4	357.1	354.9
5	.....	355.2	358.7	357.6	360.8	361.6	368.4	361.4	357.9	356.5	357.1	354.8
6	.....	355.4	359.2	357.6	360.5	361.4	367.7	361.2	357.8	356.5	357.0	354.6
7	352.9	356.8	360.1	358.0	360.3	361.1	366.9	361.0	357.7	356.5	357.0	354.0
8	353.5	356.4	359.9	358.8	360.2	360.9	366.7	361.0	357.6	356.6	357.0	353.0
9	353.9	355.6	359.0	359.2	360.2	360.8	366.6	360.9	357.6	356.7	357.0	352.6
10	354.1	355.5	357.9	360.0	360.3	360.8	366.2	360.9	357.5	356.8	357.0	352.6
11	354.4	355.7	356.9	361.3	360.3	361.0	365.7	360.7	357.4	356.9	356.9	352.6
12	354.6	356.4	356.6	363.7	360.4	361.0	365.5	360.5	357.3	356.9	357.0	352.6
13	354.7	357.5	356.6	365.2	360.6	361.2	365.6	360.2	357.2	357.8	357.2	352.8
14	355.0	358.0	356.7	364.3	360.8	362.4	365.7	360.0	357.1	358.1	357.4	353.0
15	355.0	357.8	356.8	363.6	361.1	363.6	365.7	359.8	357.0	358.0	357.6	353.0
16	355.2	357.3	356.8	363.0	362.6	363.8	365.7	359.6	357.0	357.9	357.5	353.3
17	354.7	357.1	356.7	362.6	362.5	363.9	365.7	359.4	356.9	357.8	357.4	353.4
18	354.0	356.9	357.8	362.2	362.1	364.0	365.9	359.2	356.8	357.7	357.2	353.9
19	353.9	356.8	358.3	361.8	361.7	364.6	365.6	359.2	356.8	357.7	357.0	354.2
20	354.0	356.3	358.4	361.7	361.4	365.9	365.1	359.1	356.7	357.5	356.8	354.5
21	354.1	354.7	357.9	361.5	362.5	366.4	364.7	358.9	356.7	357.5	356.7	354.3
22	354.4	353.3	357.6	361.5	363.1	366.6	364.4	358.8	356.6	357.4	356.6	354.1
23	354.6	.....	357.1	361.4	362.9	366.3	363.9	358.7	356.6	357.4	356.6	354.2
24	354.5	.....	356.9	361.2	362.6	366.7	363.5	358.5	356.6	357.5	356.5	354.1
25	354.6	.....	356.7	360.9	362.4	367.1	363.2	358.4	356.5	357.5	356.3	354.2
26	354.6	353.2	356.9	360.9	362.2	367.3	363.0	358.4	356.4	357.6	356.2	354.2
27	355.3	353.2	357.0	361.0	362.2	367.7	362.7	358.3	356.4	357.7	356.0	354.4
28	355.0	354.9	357.1	360.8	362.3	367.9	362.4	358.3	356.4	357.8	355.8	354.5
29	354.5		357.0	360.6	362.7	368.4	362.3	358.2	356.4	357.7	355.6	354.7
30	353.8		356.9	360.4	363.1	368.6	362.5	358.2	356.4	357.5	355.5	354.9
31	353.8		356.8		363.2		362.3	358.2		357.3		354.5

Missouri River.—Atchison, Kan., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	354.6	358.5	358.7	361.1	360.9	365.6	370.1	362.8	359.9	357.3	358.3	355.6
2	355.0	358.5	356.9	361.0	360.7	365.3	369.3	362.5	359.7	357.3	358.1	355.3
3	355.3	358.5	357.8	361.3	360.7	366.1	368.5	362.6	359.5	357.2	358.0	355.0
4	355.5	358.4	358.3	361.1	360.7	366.6	367.9	362.7	359.4	357.5	357.9	354.9
5	355.9	358.4	359.8	361.2	360.3	366.7	367.7	362.6	359.2	357.7	357.8	354.8
6	356.5	358.4	359.4	361.3	360.2	366.5	367.6	362.2	358.9	357.9	358.0	354.9
7	356.7	358.4	359.0	361.3	360.1	366.2	367.8	361.8	358.7	358.1	358.0	354.8
8	356.4	358.3	358.5	361.1	359.9	366.1	367.6	361.6	358.6	358.1	358.1	355.0
9	356.3	358.2	358.2	361.0	360.1	366.2	367.5	361.6	358.4	357.9	358.1	355.2
10	356.5	358.2	358.6	360.7	360.2	366.1	367.7	361.8	358.3	357.7	358.0	355.3
11	356.7	358.2	360.5	360.8	360.6	365.8	367.9	361.7	358.2	357.5	357.9	355.5
12	356.8	358.0	360.3	360.7	361.2	366.2	368.2	361.5	358.0	357.3	357.8	355.6
13	356.6	357.9	359.8	360.5	361.8	366.0	368.0	361.6	357.8	357.4	357.7	355.7
14	356.6	358.0	360.1	361.0	362.4	365.8	367.8	361.7	357.8	357.1	357.7	355.9
15	356.6	358.0	360.6	361.6	362.8	365.9	367.3	361.6	357.7	356.9	357.6	356.0
16	356.6	359.0	361.3	361.6	364.0	366.3	366.8	361.8	357.6	356.8	357.3	355.8
17	356.6	359.6	361.2	362.9	365.1	367.7	366.2	361.8	357.6	356.7	356.8	355.9
18	356.7	360.4	361.0	363.7	365.5	369.0	365.8	362.0	357.6	356.8	356.5	355.8
19	357.0	360.5	361.4	364.6	366.2	370.0	365.2	362.4	357.5	357.3	356.2	354.5
20	357.9	360.3	361.5	365.8	365.9	369.7	365.2	362.9	357.3	358.1	356.2	353.6
21	358.3	360.0	361.0	365.1	365.5	369.1	364.9	362.3	357.2	358.2	355.9	352.8
22	358.5	359.8	360.6	363.8	365.1	369.1	364.7	361.9	357.3	358.0	356.2	352.6
23	358.6	359.4	359.7	362.8	364.9	369.5	364.3	361.5	357.3	357.8	356.6	352.3
24	358.6	360.3	359.6	362.1	364.6	369.9	363.9	361.3	357.3	357.8	356.8	352.4
25	358.6	360.1	359.3	361.8	366.6	370.8	363.8	361.1	357.5	357.9	356.7	352.1
26	358.6	360.4	361.6	361.5	367.8	371.1	363.7	360.9	357.6	357.9	356.7	352.2
27	358.6	360.3	362.8	361.5	367.7	370.9	363.6	360.7	357.7	358.0	356.6	352.4
28	358.6	359.3	362.3	361.5	367.0	370.7	363.4	360.6	357.6	358.3	356.4	352.9
29	358.6		361.9	361.1	366.4	370.6	363.2	360.4	357.5	358.4	356.1	352.5
30	358.5		361.6	360.9	366.2	370.4	363.3	360.3	357.4	358.5	355.8	352.0
31	358.5		361.2		366.1		363.0	360.2		358.4		352.6

Missouri River.—Atchison, Kan., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	352.3	356.7	357.9	363.9	362.0	364.2	366.4	364.0	359.7	358.3	357.4	355.3
2	352.4	356.7	357.8	364.3	362.8	364.3	366.6	363.5	359.5	358.2	357.4	355.5
3	353.5	356.6	358.1	364.9	362.9	364.7	367.3	362.8	359.2	358.2	357.4	355.6
4	354.1	356.6	358.2	365.4	362.7	365.1	367.7	362.3	359.0	358.2	357.3	355.7
5	355.0	356.7	358.5	366.9	362.7	365.2	367.9	361.9	358.9	358.3	357.2	355.9
6	355.6	356.6	358.5	368.0	362.6	365.2	367.8	361.3	358.7	359.0	357.2	356.3
7	355.9	356.7	358.5	368.3	362.6	365.2	367.5	360.9	358.5	359.6	357.1	356.5
8	356.0	356.7	358.6	368.6	363.1	365.7	366.9	360.7	358.6	359.7	357.1	356.5
9	356.3	356.7	359.1	369.0	363.5	366.3	366.4	360.4	358.7	359.6	357.0	356.5
10	356.4	356.7	358.7	368.2	362.9	366.4	366.2	360.2	358.5	359.5	356.9	356.5
11	356.5	356.7	357.8	365.8	362.4	366.3	365.8	359.9	358.3	359.4	356.9	356.4
12	356.7	356.7	358.4	365.8	362.2	366.2	365.5	359.7	358.2	359.5	357.0	356.3
13	356.9	356.7	357.7	365.2	362.1	366.1	365.7	359.5	358.2	359.7	357.0	355.9
14	357.0	356.7	358.0	364.4	361.8	366.0	365.2	359.6	358.1	359.8	357.0	355.7
15	357.1	356.7	357.7	363.9	361.5	366.1	364.6	359.4	358.0	359.7	357.0	354.6
16	357.3	356.6	358.5	363.8	361.3	366.5	364.3	359.2	358.1	359.4	357.0	354.0
17	357.5	356.6	359.7	363.6	361.3	367.1	364.0	359.0	358.2	358.9	357.0	353.7
18	357.5	356.6	360.1	363.2	361.2	367.8	363.9	359.3	358.2	358.6	357.1	354.7
19	357.5	356.5	359.8	363.1	361.3	367.9	363.8	359.5	358.1	358.4	357.1	354.4
20	357.6	356.5	360.5	363.0	361.4	367.8	363.7	359.3	357.9	358.1	357.1	354.2
21	357.7	356.6	361.1	363.0	361.2	368.0	363.7	359.3	357.9	357.9	357.1	354.1
22	357.7	356.6	361.0	362.9	361.0	368.2	363.5	359.4	357.8	357.8	357.1	354.0
23	357.6	356.7	361.4	362.8	361.7	368.5	363.4	359.3	357.8	357.6	357.1	354.1
24	357.6	356.8	363.3	362.5	362.0	368.5	363.5	359.1	357.6	357.5	356.9	354.2
25	357.6	356.9	366.6	362.2	362.6	368.4	363.7	359.6	357.5	357.4	356.2	354.3
26	357.6	357.1	366.1	361.9	362.8	368.4	363.8	359.3	357.7	357.3	355.8	354.3
27	357.5	357.2	364.6	361.6	362.8	368.1	363.6	359.6	358.1	357.3	355.5	354.3
28	357.4	357.1	364.0	361.4	362.7	367.6	363.5	359.7	358.0	357.3	355.1	354.6
29	357.2	357.5	363.8	361.4	362.9	367.2	363.6	359.7	358.2	357.4	354.9	355.5
30	357.0	357.5	363.9	361.5	363.8	366.6	363.6	359.8	358.3	357.4	355.1	355.8
31	356.8		363.6		364.1		364.1			357.4		355.8

Missouri River.—Atchison, Kas., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	355.80	355.70	357.33	360.98	361.55	362.92	366.10	363.10	359.92	356.37	356.65	356.50
2	355.80	355.73	357.90	361.32	361.90	363.12	366.20	362.55	359.67	356.25	356.70	356.50
3	355.80	355.93	358.75	361.23	361.55	363.20	366.30	362.05	359.55	356.17	356.67	356.50
4	355.92	356.55	359.50	360.95	361.07	363.00	366.25	361.88	359.43	356.15	356.58	356.10
5	356.27	357.05	360.30	360.75	360.85	363.55	366.23	361.70	359.00	356.07	356.45	356.82
6	356.47	358.00	361.05	360.90	360.80	364.00	366.45	361.60	358.78	355.93	356.27	356.60
7	356.60	358.67	361.30	361.15	360.83	364.10	366.50	361.50	358.90	355.90	356.28	356.20
8	356.80	358.87	361.47	361.20	360.55	364.05	366.30	361.60	358.67	355.90	356.30	354.75
9	356.90	358.93	360.65	361.38	360.32	363.80	366.10	361.70	358.60	355.85	356.35	353.52
10	356.87	358.83	361.45	361.10	360.17	364.65	365.85	361.72	358.55	355.78	356.55	353.82
11	356.85	358.75	361.35	360.75	360.05	366.95	365.55	362.00	358.58	355.63	356.75	356.05
12	356.80	358.67	361.95	361.25	360.00	367.00	365.33	361.78	358.68	355.63	356.83	356.05
13	356.80	358.58	361.90	361.70	359.90	367.10	365.17	361.65	358.78	355.77	357.00	355.45
14	356.80	358.40	361.75	361.95	359.85	367.10	365.05	361.32	359.00	356.05	356.85	355.10
15	356.80	358.30	362.05	362.85	359.73	367.60	364.95	360.93	359.00	356.27	356.75	355.00
16	356.78	358.25	362.90	362.55	359.70	368.30	364.60	360.55	359.00	356.25	356.60	355.65
17	356.70	358.25	362.57	362.00	359.83	368.95	364.33	360.17	359.02	356.33	356.57	356.07
18	356.65	358.08	362.30	361.45	360.33	369.00	364.17	359.85	359.10	356.37	356.57	356.45
19	356.55	357.82	362.32	360.67	361.45	368.90	363.75	359.73	359.02	356.43	356.78	356.65
20	356.43	357.52	361.65	360.00	361.35	368.40	363.42	359.63	358.50	356.30	356.80	356.75
21	356.35	357.25	361.05	359.50	361.30	368.15	363.07	359.40	358.10	356.17	356.78	356.75
22	356.35	357.05	360.75	359.20	361.10	368.00	362.93	359.30	357.90	356.05	356.68	356.65
23	356.25	356.93	360.52	359.30	361.42	367.85	363.22	359.22	357.80	355.95	356.60	354.47
24	356.20	356.82	360.40	359.70	362.25	367.50	363.37	359.23	357.75	355.95	356.63	354.35
25	356.15	356.72	361.50	360.33	362.15	367.20	363.80	359.35	357.55	356.10	356.70	354.75
26	356.05	356.70	361.85	360.70	361.92	367.05	363.77	359.45	357.27	356.02	356.70	354.77
27	355.93	356.75	361.20	360.90	361.70	366.95	363.60	359.58	357.05	356.00	356.60	356.40
28	355.85	357.07	361.10	360.85	361.57	366.85	363.65	359.57	356.85	356.00	356.65	357.00
29	355.80		361.00	361.25	362.10	366.50	363.52	359.52	356.65	356.15	356.63	356.70
30	355.75		360.90	361.55	362.40	366.15	363.17	359.72	356.45	356.30	356.53	356.53
31	355.70		360.90		362.60		363.20	359.95		356.55		356.80

Missouri River.—St. Joseph, Mo., 1872.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1							491.3	387.3	382.8	380.7	380.4	377.4
2							491.4	386.7	383.0	380.7	380.3	380.5
3							391.7	386.5	382.7	380.7	380.3	380.5
4							391.7	386.8	382.5	380.7	380.3	380.5
5							391.5	386.8	382.3	380.6	380.3	380.8
6							391.2	386.5	382.4	380.5	380.4	380.8
7							391.0	386.2	382.2	380.4	380.4	381.0
8							390.7	385.9	382.2	380.3	380.7	381.0
9							390.2	385.7	382.1	380.3	380.7	381.0
10							389.9	385.7	381.8	380.3	380.7	381.0
11							389.9	385.7	381.7	380.2	380.7	381.1
12							389.2	385.8	381.6	380.2	380.8	381.1
13							388.8	385.4	381.6	380.3	381.1	381.1
14							388.5	385.0	381.7	380.3	381.2	381.1
15							388.2	384.7	381.7	380.4	381.6	381.0
16							388.2	384.7	381.7	380.3	381.8	381.0
17							388.0	384.9	381.7	380.3	381.8	380.9
18							387.7	384.8	381.7	380.3	381.8	380.8
19						389.5	387.3	384.8	381.7	380.2	382.0	380.8
20						389.4	386.8	384.7	381.5	380.2	382.2	380.7
21						389.2	386.7	384.5	381.4	380.2	382.3	380.7
22						389.2	386.5	384.0	381.3	380.2	381.8	380.7
23						389.2	386.3	383.8	381.2	380.2	380.8	380.8
24						390.9	386.2	383.7	381.2	380.2	380.0	380.8
25						391.2	386.0	383.4	381.1	380.2	378.3	380.7
26						391.7	385.9	383.2	381.0	380.2	378.6	381.1
27						391.7	385.8	383.2	380.8	380.2	378.1	381.5
28						391.7	385.5	383.2	380.8	380.2	377.7	381.7
29						391.7	385.3	383.0	380.7	380.2	377.2	381.7
30						391.5	386.4	382.9	380.7	380.3	378.2	381.8
31							387.9	383.0	380.7	380.3	.....	381.8

Missouri River.—St. Joseph, Mo., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	381.8	381.9	384.3	385.5	387.2	389.3	395.2	389.0	385.3	382.5	381.4	381.4
2	381.8	381.9	384.2	385.5	386.2	389.2	395.6	388.7	385.2	382.4	381.4	382.2
3	381.7	381.9	384.0	385.5	386.7	389.5	395.7	388.5	384.8	382.2	381.3	380.7
4	381.7	381.9	383.5	385.7	386.0	390.8	395.9	388.3	384.7	382.3	381.2	379.2
5	381.7	381.9	383.3	385.7	385.5	391.0	396.0	388.3	384.5	382.4	381.2	377.3
6	381.7	381.7	383.3	385.5	385.5	391.3	396.0	388.2	384.3	382.3	381.2	377.5
7	381.7	381.7	383.0	385.4	385.7	391.7	395.8	388.2	384.2	382.2	381.2	377.2
8	381.6	381.7	383.2	385.2	385.6	392.6	395.3	388.2	383.8	382.1	381.2	377.2
9	381.6	381.6	383.9	385.2	385.7	393.2	394.7	388.1	383.7	382.0	381.2*	377.0
10	381.6	381.6	384.0	385.0	386.5	392.2	394.4	387.7	383.7	381.9	381.2	377.0
11	381.6	381.7	383.0	384.9	387.5	392.2	394.0	387.3	383.7	381.9	381.2	377.0
12	381.6	381.7	382.7	385.0	387.8	393.2	393.4	386.7	383.7	381.9	381.2	377.0
13	381.6	381.8	382.7	385.2	388.2	393.2	393.1	386.9	383.6	381.9	381.2	377.2
14	381.7	381.9	382.4	385.5	387.8	393.2	392.8	386.7	383.4	381.8	381.2	377.3
15	381.9	382.1	382.8	385.8	387.6	393.5	392.6	386.7	383.4	381.7	381.1	377.2
16	382.1	382.3	382.8	385.9	387.2	393.3	392.2	386.5	383.3	381.7	381.0	377.2
17	382.1	382.7	382.9	386.2	387.2	393.2	392.1	386.3	383.2	381.7	380.9	377.4
18	382.3	382.7	383.0	385.9	387.4	393.4	392.0	386.3	383.2	381.8	380.9	377.6
19	382.3	382.8	382.9	385.4	388.2	393.2	392.0	386.2	383.2	381.7	380.9	377.9
20	382.3	382.8	382.9	385.3	388.3	393.3	391.8	386.1	383.0	381.7	381.0	378.0
21	382.3	382.9	383.2	385.7	387.6	394.0	391.6	385.9	382.9	381.7	381.0	377.8
22	382.3	382.9	383.4	385.5	387.7	393.2	391.4	385.7	382.7	381.7	380.9	377.2
23	381.8	383.0	383.5	385.2	387.4	393.2	391.2	385.5	382.7	381.7	381.3	377.5
24	381.8	383.3	383.6	385.0	387.1	393.5	391.0	385.2	382.7	381.7	381.7	377.8
25	381.8	383.3	383.9	384.8	386.8	393.7	390.7	385.2	382.7	381.5	382.0	378.2
26	381.8	384.0	387.4	384.9	387.2	393.8	390.7	385.2	382.7	381.7	382.1	378.3
27	381.8	384.3	386.4	384.8	387.4	393.8	391.1	385.0	382.6	381.6	382.2	378.4
28	381.8	384.3	386.3	387.0	388.5	393.7	390.9	385.0	382.6	381.6	382.0	378.5
29	381.8	386.0	386.0	387.8	389.2	393.7	390.2	385.0	382.6	381.5	381.7	378.4
30	381.8	385.7	385.7	387.4	390.0	394.1	389.7	384.9	382.5	381.5	381.4	378.6
31	381.8	385.7	385.7	387.4	389.5	389.3	389.3	384.7	382.5	381.4	381.4	378.8

Missouri River.—St. Joseph, Mo., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	378.7	384.2	383.3	384.5	384.3	384.4	.....	.....	.....	382.2	381.5	378.5
2	379.0	384.2	383.2	384.2	384.7	384.2	.....	.....	.....	382.0	381.5	378.7
3	379.4	384.2	383.1	384.0	384.5	384.2	.....	.....	.....	381.8	381.6	378.8
4	379.9	383.9	382.9	383.7	384.5	384.8	.....	.....	.....	381.8	381.7	379.3
5	378.4	383.9	383.2	383.5	383.9	388.1	.....	.....	.....	381.7	381.7	379.3
6	378.2	383.7	383.0	383.4	383.7	389.2	.....	.....	.....	381.6	381.7	379.5
7	378.2	383.7	383.2	382.9	383.5	390.7	.....	.....	.....	381.6	381.7	379.7
8	378.8	383.3	383.0	382.8	383.4	391.7	.....	.....	.....	381.5	381.7	379.8
9	379.4	383.2	382.9	382.8	383.3	391.7	.....	.....	.....	381.4	381.7	380.0
10	379.7	383.0	383.0	382.7	384.2	391.6	.....	.....	.....	381.3	381.7	380.3
11	379.7	383.0	382.9	382.5	384.5	391.2	.....	.....	.....	381.3	381.6	380.8
12	379.4	383.1	382.9	382.3	384.4	391.0	.....	.....	.....	381.3	381.6	381.0
13	379.7	383.1	383.0	382.3	383.9	391.4	.....	.....	.....	381.3	381.4	380.8
14	379.4	383.0	382.7	382.4	383.5	391.7	.....	.....	.....	381.3	381.4	380.5
15	379.2	383.0	382.3	382.4	383.4	392.0	.....	.....	.....	381.3	381.3	380.4
16	380.2	383.0	382.2	382.3	383.3	392.7	.....	.....	.....	381.3	381.5	380.2
17	381.7	383.0	382.2	382.3	383.4	392.8	.....	.....	.....	381.3	381.6	379.9
18	382.2	382.9	383.2	382.2	383.3	392.7	.....	.....	.....	381.3	381.6	379.6
19	381.4	382.9	384.5	382.2	383.5	392.6	.....	.....	.....	381.4	381.6	379.5
20	382.0	383.0	384.7	382.4	383.7	392.3	.....	.....	.....	381.3	380.5	379.2
21	382.2	383.3	385.8	382.4	383.8	392.1	.....	.....	.....	381.5	380.2	378.7
22	382.3	383.4	386.0	382.7	383.7	391.7	.....	.....	.....	381.6	380.2	378.6
23	383.5	383.3	387.3	385.3	385.5	391.2	.....	.....	.....	381.5	379.4	378.3
24	383.8	383.2	387.6	386.3	386.2	390.8	.....	.....	.....	381.4	379.2	378.8
25	384.0	383.2	387.5	386.3	386.0	390.5	.....	.....	.....	381.4	378.9	378.7
26	384.0	383.5	386.8	385.7	385.7	390.3	.....	.....	.....	381.3	379.1	378.9
27	384.1	383.5	386.2	385.3	385.3	390.3	.....	.....	.....	381.3	378.5	379.1
28	384.2	383.4	385.8	385.0	385.1	390.2	.....	.....	.....	381.6	378.3	379.3
29	384.2		385.8	384.8	384.8	390.1	.....	.....	.....	381.6	378.5	379.3
30	384.2		385.0	384.8	384.7	390.2	.....	.....	.....	381.5	378.5	378.5
31	384.0		384.7	384.8	384.7		.....	.....	.....	381.5		378.8

Missouri River.—St. Joseph, Mo., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	379.1	381.0	381.1	387.7	394.7	389.2	394.1	390.5	388.7	387.2	384.9	380.5
2	379.0	380.9	381.6	386.7	393.8	390.7	393.5	390.3	388.3	386.8	384.8	380.7
3	379.1	380.7	381.7	385.1	393.7	391.3	393.3	390.0	388.7	386.8	384.7	380.6
4	379.3	380.7	381.4	385.6	393.3	391.7	393.8	389.8	388.8	386.7	384.6	381.2
5	380.8	381.2	381.4	386.2	392.8	391.7	394.0	389.7	389.0	386.7	384.5	381.9
6	381.1	381.1	381.5	387.7	391.7	391.7	393.7	389.3	391.7	386.7	384.5	383.0
7	381.2	381.1	381.4	388.0	391.4	392.0	393.5	388.9	391.8	386.7	384.4	382.8
8	381.3	380.4	381.5	388.3	391.3	392.0	393.2	388.6	391.5	386.5	384.4	382.5
9	380.8	380.4	381.7	388.7	391.1	391.9	393.0	388.3	391.2	386.3	384.4	382.2
10	380.4	380.3	382.0	389.8	390.9	391.7	392.7	388.2	390.9	386.2	384.4	382.1
11	381.2	380.3	382.2	389.7	390.7	391.3	392.7	388.2	390.6	386.2	384.4	381.7
12	381.0	380.2	382.4	389.7	389.8	390.9	393.2	388.1	390.3	386.0	384.3	381.8
13	381.3	381.1	382.7	389.6	389.1	390.7	392.8	388.0	389.9	385.9	384.3	381.9
14	381.3	381.3	382.9	389.3	388.7	390.3	392.8	388.1	389.7	385.8	384.3	382.1
15	381.3	381.6	383.2	388.8	388.4	390.1	392.7	387.9	389.7	385.7	384.4	382.0
16	381.3	381.6	383.6	390.3	388.3	389.7	392.3	387.7	389.7	385.5	384.4	382.2
17	381.3	381.6	383.8	391.1	388.2	389.3	391.8	387.5	389.7	385.4	384.2	382.2
18	381.6	381.7	384.3	390.4	388.2	389.2	391.8	387.2	389.7	385.3	384.2	381.3
19	381.8	381.7	384.7	389.7	388.2	389.7	391.5	387.0	389.7	385.2	383.7	380.8
20	381.9	380.8	384.3	389.1	388.3	390.6	391.2	386.8	389.3	385.2	383.5	381.3
21	381.9	381.0	383.6	388.9	388.3	392.1	390.8	386.8	389.0	385.2	383.6	382.8
22	381.8	381.5	383.3	389.3	388.5	392.6	390.6	386.7	388.7	385.1	382.3	382.5
23	381.7	381.6	381.6	390.6	388.7	392.6	390.4	386.7	388.4	385.0	381.7	382.7
24	381.7	381.3	381.7	391.8	388.6	393.0	390.4	386.6	388.2	384.9	381.3	383.0
25	381.6	381.5	382.0	393.1	388.4	393.7	390.3	386.3	388.2	385.1	381.1	383.1
26	381.4	381.5	382.7	393.3	388.4	394.0	390.3	386.9	387.9	385.0	381.1	383.2
27	381.3	381.0	384.5	394.5	388.4	394.5	390.3	386.7	387.7	384.8	381.1	383.8
28	381.3	381.3	385.3	395.0	388.6	394.8	390.3	387.7	387.5	384.8	381.2	382.9
29	381.3		385.5	395.5	388.7	395.0	390.4	388.2	387.3	384.8	380.7	382.3
30	381.2		386.2	395.1	388.8	394.7	390.5	388.7	387.2	384.9	380.5	382.3
31	381.1		388.3		388.4	390.7	390.7	388.6		384.7		382.7

Missouri River.—St. Joseph, Mo., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	384.3	381.1	382.7	387.4	387.7	388.9	393.9	389.0	387.2	387.3	385.2	380.7
2	384.0	380.3	382.2	388.3	387.7	389.2	394.1	388.8	387.3	387.2	385.4	380.4
3	383.8	380.2	381.7	388.2	387.3	390.2	394.3	388.6	387.4	387.0	385.5	380.3
4	383.5	380.0	381.6	387.7	387.2	390.8	394.6	388.5	387.5	386.7	385.2	380.2
5	383.2	379.8	381.5	387.6	387.5	390.7	394.8	388.2	387.7	386.6	385.2	380.0
6	383.0	379.7	381.7	387.9	388.5	390.6	394.8	388.2	388.5	386.4	385.3	380.0
7	382.8	379.8	382.3	388.2	389.1	391.4	394.0	388.4	388.6	386.2	385.2	379.8
8	383.0	380.8	384.2	387.8	388.7	392.3	393.7	388.4	388.6	386.0	385.1	380.5
9	383.2	383.8	384.6	387.6	388.7	392.3	393.7	388.5	388.8	385.9	385.0	380.6
10	383.3	383.7	384.7	387.7	388.8	392.3	393.7	388.8	388.7	385.7	384.8	380.9
11	382.1	383.3	384.5	387.8	388.6	393.5	393.6	389.0	389.0	385.5	384.7	380.2
12	381.3	383.7	384.2	387.9	387.9	393.8	393.2	388.5	388.7	385.4	384.7	381.7
13	381.0	383.3	383.1	388.2	387.5	393.8	393.1	388.2	389.3	385.3	384.7	381.6
14	380.7	383.2	383.7	390.2	387.2	393.9	392.7	388.0	389.9	385.2	384.7	382.0
15	382.3	383.1	384.8	391.5	386.7	393.7	392.2	387.9	390.1	385.2	384.6	382.5
16	383.4	383.0	385.1	393.2	386.7	393.6	392.2	387.9	389.8	385.0	384.3	382.5
17	383.7	382.9	385.2	393.3	386.7	393.4	392.1	387.8	389.3	384.9	384.2	382.5
18	384.3	382.9	385.5	392.6	386.7	393.2	391.7	387.8	389.1	384.8	384.2	382.6
19	383.8	382.9	385.5	392.1	386.6	393.3	391.7	387.9	389.0	384.8	384.0	383.3
20	383.7	383.0	385.5	391.2	386.5	393.7	391.3	388.2	389.0	385.0	383.6	383.3
21	383.6	383.1	385.1	390.8	386.4	394.3	391.4	388.6	388.7	384.7	383.5	383.5
22	383.5	383.2	384.7	390.2	386.5	394.3	391.2	388.4	388.6	384.7	383.3	383.5
23	383.3	383.4	384.4	390.5	386.6	394.2	390.8	388.4	388.6	384.7	383.0	383.6
24	381.3	383.3	384.5	390.8	386.6	393.9	390.6	388.5	388.6	385.0	382.8	383.7
25	381.8	383.2	384.2	390.2	386.7	393.1	390.4	388.3	388.7	385.1	382.7	383.7
26	381.8	383.1	384.2	389.8	386.9	392.9	390.2	387.8	388.4	385.2	382.6	383.8
27	384.3	382.9	384.7	389.6	387.2	393.2	390.1	387.4	388.2	385.2	382.6	384.2
28	383.7	382.9	385.7	389.1	388.5	393.3	390.0	387.0	387.8	385.2	382.6	384.5
29	383.3	382.7	386.7	388.3	389.2	393.6	389.8	386.9	387.6	385.0	383.0	385.0
30	381.8		386.5	387.8	390.0	393.7	389.4	386.8	387.5	385.0	383.4	385.3
31	381.3		386.8	387.8	389.2	393.7	389.2	386.9		384.9		385.3

Missouri River.—St. Joseph, Mo., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	385.4	384.7	385.7	388.9	390.7	394.6	396.1	390.6	386.7	384.7	384.8	382.4
2	385.5	384.7	385.5	388.8	390.0	393.9	396.2	390.4	386.7	384.7	384.8	382.4
3	385.6	384.9	385.7	388.3	389.7	393.7	396.2	390.3	386.6	384.7	384.8	382.7
4	385.7	385.2	385.7	388.1	389.3	393.7	396.1	390.2	386.6	384.8	384.9	382.8
5	385.7	385.4	385.6	388.5	388.9	393.5	395.9	390.1	386.3	384.7	385.1	383.0
6	385.7	385.7	385.5	390.7	388.9	393.1	395.4	390.1	386.2	384.7	385.0	383.2
7	385.7	385.9	385.4	392.0	388.9	393.3	395.0	390.2	386.2	384.6	384.9	382.9
8	385.7	386.4	385.3	393.3	388.9	394.2	394.7	390.2	386.0	384.7	384.9	382.9
9	385.8	386.9	383.3	393.3	388.9	395.5	395.0	390.2	386.4	384.7	384.9	383.1
10	385.9	386.5	383.2	392.2	388.7	396.2	395.1	390.7	386.1	384.7	384.9	383.1
11	385.9	387.2	383.2	391.2	389.3	396.3	394.5	389.3	386.1	384.7	384.8	383.3
12	385.9	385.2	383.2	390.9	389.3	396.6	393.8	389.1	386.0	384.6	384.7	383.3
13	385.9	385.0	383.2	390.6	389.5	396.7	393.4	388.9	385.9	384.6	384.5	383.3
14	385.9	384.9	384.1	390.3	389.7	396.9	392.9	388.7	385.9	384.6	384.7	383.4
15	385.9	384.7	384.9	390.3	389.7	396.9	392.6	388.7	386.0	384.7	384.7	383.3
16	385.9	384.7	385.4	390.2	390.2	396.7	392.6	388.6	386.0	384.8	384.7	383.3
17	385.9	384.7	387.3	390.2	390.3	396.2	393.1	388.3	385.9	384.9	384.9	383.4
18	385.9	385.0	387.1	390.2	390.7	395.7	393.4	388.1	385.7	385.1	384.9	383.5
19	385.9	385.2	386.7	390.7	391.4	395.2	393.4	387.9	385.6	385.2	384.8	383.6
20	385.9	385.2	386.7	390.5	392.3	394.8	393.4	387.7	385.3	385.5	384.8	383.9
21	385.9	385.2	386.7	390.2	392.1	394.4	393.2	387.1	385.3	385.9	384.8	384.1
22	385.9	385.7	386.7	390.1	392.0	394.2	393.2	387.9	385.2	386.0	384.7	384.3
23	385.9	386.2	387.0	391.0	391.7	393.9	393.2	387.7	385.2	385.7	384.6	384.6
24	385.9	386.6	387.3	391.0	391.7	394.0	392.8	387.7	385.1	385.6	384.5	384.8
25	385.9	386.2	387.2	390.6	391.7	394.2	392.5	387.4	385.0	385.5	384.7	385.0
26	385.9	385.7	387.2	390.4	391.3	394.6	391.9	387.4	384.9	385.3	384.9	385.1
27	385.8	385.7	387.2	390.1	391.1	395.1	391.7	387.5	384.9	385.3	385.1	385.2
28	385.6	385.7	387.4	390.4	392.9	395.2	391.2	387.3	384.9	385.2	385.3	385.3
29	385.3		387.2	390.6	393.9	395.4	391.1	387.1	384.8	385.1	385.3	385.7
30	385.1		387.4	390.7	394.4	395.3	390.7	386.9	384.8	384.9	385.3	385.4
31	384.7		387.8		394.6		390.6	386.7		384.9		385.2

Missouri River.—St. Joseph, Mo., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	385.1	383.7	385.1	387.3	392.5	394.7	397.5	393.9	388.1	386.8	385.7	385.3
2	384.9	383.7	385.2	386.9	392.7	394.6	397.6	393.5	388.1	386.7	385.7	385.2
3	384.7	383.8	385.4	386.7	392.7	394.2	397.6	392.9	388.0	386.7	385.5	385.2
4	384.2	383.8	385.2	386.7	392.6	394.0	397.4	392.5	387.8	386.7	385.5	385.2
5	383.7	383.7	385.1	386.7	392.3	394.2	397.2	392.5	387.7	386.6	385.6	385.1
6	383.3	383.7	385.0	386.8	391.9	395.3	396.9	392.2	387.7	386.4	385.6	385.1
7	383.0	383.7	384.9	386.8	391.6	395.9	396.7	392.2	387.7	386.2	385.5	385.1
8	382.7	383.8	384.9	386.8	391.2	396.2	396.6	392.0	387.9	386.2	385.5	385.1
9	382.3	383.9	385.1	387.0	391.8	396.4	396.7	391.7	388.0	386.2	385.4	385.0
10	381.8	383.9	385.2	387.1	390.3	396.7	396.5	391.7	388.1	386.2	385.4	385.0
11	381.5	384.6	385.3	387.3	390.0	396.6	396.7	391.5	387.7	386.2	385.5	384.9
12	381.3	384.2	385.4	387.5	389.9	396.6	396.8	391.2	388.0	386.0	385.5	384.7
13	381.7	384.2	385.6	387.4	389.7	396.5	396.4	390.9	387.8	386.0	385.6	384.7
14	381.8	384.1	385.8	387.2	389.3	396.1	397.0	390.8	387.7	386.0	385.7	382.3
15	382.2	384.2	386.2	386.9	389.1	395.5	395.7	390.7	387.7	386.0	385.7	382.3
16	382.4	384.2	386.7	386.7	389.9	395.2	395.3	390.4	387.6	386.2	385.7	382.3
17	382.7	384.2	386.3	386.7	388.7	395.0	395.2	390.2	387.4	386.1	385.9	382.3
18	382.9	384.2	386.2	386.7	388.8	395.1	395.2	390.1	387.3	386.0	385.9	382.2
19	383.9	384.2	385.8	386.9	388.9	395.1	395.1	389.7	387.2	386.0	385.9	381.9
20	383.3	384.2	385.5	387.2	388.9	395.4	395.1	389.5	387.3	385.8	385.7	381.6
21	383.1	384.3	385.4	387.2	388.9	396.1	394.7	389.3	387.4	385.7	385.7	380.9
22	383.2	384.6	385.3	387.2	389.1	396.4	394.2	389.5	387.3	385.7	385.7	380.7
23	383.2	384.7	385.2	387.3	389.2	396.7	393.8	389.3	387.1	385.8	385.7	380.7
24	383.2	384.7	385.2	387.7	389.8	396.9	393.6	389.2	387.0	385.7	385.7	381.3
25	383.3	384.7	385.0	388.1	392.2	397.2	393.7	389.0	387.2	385.7	385.7	383.0
26	383.5	384.8	384.9	389.4	393.4	397.4	393.8	388.2	387.3	385.7	385.7	383.3
27	383.4	384.9	384.8	391.2	393.6	397.5	394.8	388.7	387.3	385.6	385.5	383.8
28	383.4	384.9	384.8	392.2	394.2	397.5	395.2	388.5	387.0	385.6	385.4	383.9
29	383.4		385.1	392.6	394.8	397.3	394.6	388.3	386.9	385.6	385.4	384.1
30	383.5		387.2	392.7	395.2	397.2	394.2	388.2	386.8	385.7	385.3	384.1
31	383.6		387.6		395.0		393.8	388.2		385.7		384.1

Missouri River.—St. Joseph, Mo., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	384.1	385.2	383.6	388.2	388.0	390.7	395.3	391.8	385.9	383.7	383.0	383.5
2	384.1	385.2	383.9	388.8	388.4	390.5	395.1	392.3	385.7	383.7	383.0	383.2
3	383.8	385.2	383.9	389.3	388.9	390.8	394.8	392.2	385.7	383.7	383.1	383.0
4	383.8	385.3	384.1	388.7	389.0	391.3	394.9	391.9	385.4	383.6	383.3	382.5
5	383.8	385.5	385.5	389.2	389.1	391.4	394.7	391.4	385.2	383.6	383.4	382.6
6	383.8	385.4	384.5	390.7	389.2	391.1	394.9	391.0	385.2	383.6	383.5	382.8
7	383.8	385.4	384.3	392.4	389.2	391.0	394.6	390.6	385.2	383.7	383.6	383.4
8	383.8	385.3	384.5	393.3	388.7	391.4	394.5	390.1	385.0	383.5	384.0	383.6
9	383.8	385.2	385.9	393.9	388.8	391.6	394.1	389.7	384.9	383.5	384.4	383.2
10	383.8	384.9	387.1	394.5	388.8	391.4	393.5	389.4	384.8	383.4	384.5	383.1
11	383.8	384.6	386.7	394.0	389.0	391.1	393.5	389.2	384.7	383.4	385.0	382.2
12	383.8	384.3	386.5	393.0	389.0	390.8	393.5	388.9	384.9	383.5	385.6	380.6
13	383.8	384.2	387.0	391.7	389.0	390.7	393.3	388.6	384.7	383.4	386.4	379.8
14	383.8	384.1	387.4	391.1	389.2	390.5	392.6	388.3	384.6	383.3	386.7	379.7
15	383.7	384.0	387.0	390.6	388.8	391.5	392.2	388.1	384.4	383.4	386.4	379.4
16	383.7	384.0	386.9	390.2	388.7	391.8	392.0	388.0	384.3	383.7	386.0	378.9
17	383.9	383.8	386.5	389.8	388.9	392.7	391.9	387.9	384.2	384.2	385.6	378.5
18	384.2	383.8	386.3	389.4	389.1	393.7	391.7	387.8	384.2	384.1	385.4	378.8
19	384.2	383.7	386.2	389.0	388.9	394.2	391.7	387.5	384.1	384.0	385.3	379.5
20	384.2	383.6	385.3	388.8	388.9	393.8	391.5	387.2	383.9	383.7	384.9	380.0
21	384.2	383.6	385.3	388.7	388.8	393.3	391.5	387.1	383.8	383.4	384.6	380.5
22	384.2	383.6	385.3	388.3	388.8	392.8	391.4	386.9	333.8	383.2	384.5	380.6
23	384.2	383.4	385.3	388.3	389.0	393.3	391.5	386.7	383.7	383.2	384.2	380.6
24	384.2	383.0	385.2	388.3	389.2	393.8	391.6	386.7	383.7	383.2	384.2	380.8
25	384.2	383.1	385.1	388.2	389.5	394.1	391.7	386.6	383.7	383.1	384.0	380.8
26	384.2	382.7	385.2	388.2	389.8	394.9	391.7	386.5	383.7	383.1	383.9	380.8
27	384.3	382.3	387.0	388.2	389.7	395.1	391.1	386.4	383.6	383.1	384.0	381.1
28	384.5	382.3	388.6	388.0	389.7	395.4	391.1	386.3	383.6	383.1	384.1	381.3
29	384.9		388.8	388.0	390.0	395.5	391.3	386.3	383.7	383.0	384.1	381.3
30	385.1		388.8	388.0	390.5	395.6	391.5	386.0	383.8	383.0	383.9	381.5
31	385.2		388.3	388.0	390.9		391.7	385.9		383.0		381.6

Missouri River.—St. Joseph, Mo., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	381.6	380.8	384.5	384.3	386.0	387.5	393.4	390.6	388.7	385.6	384.2	380.6
2	381.8	381.0	383.2	385.0	386.2	387.4	393.8	390.7	389.0	385.5	384.2	380.8
3	382.2	381.1	381.9	385.5	386.2	387.9	393.9	390.5	389.5	385.5	384.2	380.9
4	382.3	381.1	382.0	385.5	386.3	388.5	393.8	390.4	389.9	385.2	384.2	380.9
5	382.9	380.8	383.1	385.6	386.1	389.0	394.1	390.3	389.9	385.1	384.2	380.9
6	383.0	380.9	383.5	389.7	385.8	390.6	394.2	390.2	389.7	384.9	384.2	380.9
7	382.5	381.4	383.6	392.7	385.7	390.6	394.4	390.1	389.1	384.8	384.2	381.2
8	382.4	381.7	383.6	392.1	385.7	390.1	394.7	389.9	388.3	384.7	384.2	381.3
9	382.8	382.0	383.2	391.0	385.7	390.2	394.9	389.9	388.0	384.5	384.2	381.4
10	382.9	382.1	383.4	390.1	385.7	390.1	394.9	389.9	387.9	384.4	384.4	381.6
11	382.9	383.3	383.6	389.5	385.7	389.7	394.9	389.7	387.7	384.4	384.5	381.9
12	382.9	384.2	383.7	388.9	385.7	389.5	394.8	389.3	387.5	384.6	384.5	381.9
13	382.8	384.1	383.9	388.3	385.8	389.7	394.5	388.8	387.5	384.7	384.5	381.9
14	382.8	383.7	383.1	387.8	385.8	389.9	394.6	388.7	387.4	384.9	384.4	382.0
15	382.8	383.5	381.1	387.4	385.8	389.9	394.7	388.2	387.0	385.0	384.2	382.0
16	382.8	383.4	380.8	387.2	385.7	390.9	394.4	388.0	386.8	385.3	384.2	382.1
17	382.7	383.4	380.8	386.7	385.7	392.1	394.2	387.8	386.7	385.1	384.1	382.3
18	382.6	383.8	380.8	386.3	385.6	391.9	394.2	387.5	386.4	385.1	383.0	382.3
19	382.6	384.0	381.2	386.2	385.4	391.9	394.1	387.5	386.3	385.2	382.6	382.8
20	382.7	383.7	381.7	385.8	385.4	392.0	394.0	387.5	386.3	385.0	382.4	383.0
21	382.7	383.4	381.1	385.9	385.4	393.1	394.2	387.4	386.3	385.0	381.8	383.3
22	382.7	383.3	381.5	386.0	385.5	393.6	394.4	387.4	386.2	384.8	381.8	383.4
23	382.9	383.3	382.1	387.1	385.7	393.4	393.9	387.9	386.0	384.7	381.5	383.4
24	382.9	383.3	384.3	387.8	385.9	392.9	393.1	388.5	386.0	384.4	381.4	383.3
25	382.7	383.4	386.0	387.8	385.9	392.4	392.2	388.7	385.9	384.3	381.0	383.3
26	382.5	384.6	385.9	387.2	386.7	392.3	391.7	389.2	386.2	384.3	380.3	383.3
27	382.5	385.7	385.8	386.7	387.6	392.4	391.2	389.2	386.2	384.3	380.3	382.8
28	382.7	385.8	385.5	386.3	387.9	392.7	390.9	389.2	386.2	384.3	380.3	382.8
29	382.7	385.4	385.2	386.2	388.3	392.8	390.7	389.5	385.9	384.3	380.6	382.8
30	382.2		384.8	386.0	388.2	393.1	390.5	389.1	385.7	384.2	380.6	382.8
31	381.0		384.4		387.8		390.4	389.0		384.2		382.8

Missouri River.—St. Joseph, Mo., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	383.1	383.7	385.9	395.9	402.0	394.9	395.1	388.7	384.4	384.2	385.9	383.7
2	383.1	383.7	386.1	393.6	400.8	395.2	395.1	388.6	384.8	384.2	386.2	383.8
3	383.1	383.7	386.2	394.3	399.1	395.0	394.2	388.4	384.5	384.3	386.3	383.8
4	383.1	383.7	386.3	394.1	396.6	394.2	393.6	388.1	384.4	384.3	386.3	384.0
5	383.1	383.7	386.3	394.8	395.2	394.1	393.0	387.8	384.4	384.3	386.1	384.0
6	383.1	384.0	386.3	395.9	394.1	393.9	392.4	387.8	384.4	384.5	385.9	384.3
7	383.1	384.7	385.9	395.9	393.5	393.3	391.7	387.8	384.4	384.6	385.8	384.3
8	383.1	385.3	385.8	396.4	393.1	393.4	391.5	387.6	384.5	384.4	386.2	384.3
9	383.1	386.0	385.6	396.9	393.0	393.5	391.5	387.1	384.5	384.4	386.5	384.1
10	383.1	386.6	385.6	397.6	393.0	393.5	391.7	386.9	384.9	384.5	386.4	384.0
11	383.1	386.9	386.0	398.3	392.6	393.5	392.3	386.8	385.8	384.5	386.4	384.1
12	383.2	386.9	387.7	398.7	392.4	393.6	392.8	386.8	385.8	385.0	386.4	384.1
13	383.2	386.9	389.3	398.4	392.5	393.9	393.0	386.7	385.2	385.0	386.3	383.9
14	383.2	386.8	390.3	396.9	392.7	394.1	392.9	386.6	385.0	385.3	386.3	383.8
15	383.2	386.8	390.6	395.4	392.3	395.1	392.9	386.3	385.1	385.3	386.1	383.7
16	383.2	386.3	389.6	394.9	391.9	396.0	392.8	386.1	385.1	385.3	385.9	383.7
17	383.2	386.3	389.2	394.6	391.7	396.1	392.4	386.0	385.1	385.5	385.8	383.6
18	383.2	386.3	388.6	394.9	391.4	395.6	391.8	386.0	385.2	385.5	385.7	383.6
19	383.2	386.3	388.5	395.6	391.4	394.9	391.3	385.7	385.2	385.5	385.7	383.6
20	383.2	386.3	388.4	396.9	391.8	394.2	391.1	385.4	385.1	385.3	385.3	383.6
21	383.2	386.3	388.2	397.8	392.9	393.9	391.1	385.3	384.9	385.0	384.0	383.5
22	383.2	386.1	388.2	398.6	393.2	393.9	391.0	385.3	384.6	385.0	383.7	383.5
23	383.2	386.1	388.1	399.3	393.0	393.3	390.6	385.1	384.4	385.1	383.0	383.6
24	383.2	385.9	388.2	399.8	392.4	393.8	390.1	384.8	384.2	385.1	382.6	383.8
25	383.2	385.7	388.4	400.6	391.9	393.1	389.7	384.8	384.0	385.1	382.6	383.8
26	383.2	385.7	388.2	401.1	391.5	392.8	389.5	384.7	383.9	385.1	382.5	383.8
27	383.2	385.7	390.2	402.1	391.2	393.3	389.5	384.5	383.9	385.1	382.5	383.9
28	383.2	385.7	393.0	402.8	391.1	394.4	389.4	384.4	383.8	385.2	382.9	383.9
29	383.7		395.8	403.0	391.5	394.3	389.0	384.4	383.8	385.6	383.5	383.9
30	383.7		395.6	402.5	392.4	394.4	388.8	384.5	383.9	385.8	383.7	383.5
31	383.7		395.4		393.8		388.8	384.4		385.9		383.0

Missouri River.—St. Joseph, Mo., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	382.0	380.4	382.7	384.1	387.0	389.6	395.9	389.3	384.8	382.6	383.2	381.5
2	381.1	380.9	384.5	384.5	387.7	389.1	396.0	389.2	384.6	382.6	383.1	381.3
3	380.6	381.1	385.2	384.8	387.7	389.2	395.9	389.1	384.5	382.6	383.0	381.1
4	379.9	381.6	385.6	384.9	387.3	388.4	395.7	388.6	384.4	382.6	383.0	380.7
5	379.1	381.7	385.9	384.9	386.9	388.2	395.1	388.2	384.4	382.8	383.0	380.6
6	379.1	381.7	386.3	385.2	386.6	387.8	394.3	388.1	384.3	382.8	383.0	380.5
7	379.1	382.1	386.8	385.6	386.5	387.6	393.9	388.1	384.1	382.9	383.0	378.8
8	379.4	382.2	386.4	386.0	386.4	387.5	393.7	388.1	384.0	383.0	383.1	377.3
9	379.5	382.2	385.9	386.5	386.5	387.4	393.4	388.1	384.0	383.0	383.1	377.3
10	379.7	382.6	384.9	387.4	386.8	387.5	392.9	388.0	383.9	383.1	383.0	377.8
11	380.3	383.1	384.1	388.9	387.1	387.6	392.5	387.5	383.8	383.2	383.1	377.5
12	380.4	383.2	384.0	391.6	387.4	388.0	392.7	387.4	383.8	383.7	383.2	377.2
13	380.5	383.2	384.0	394.0	387.4	389.8	393.0	387.0	383.7	384.5	383.5	377.2
14	380.5	383.4	384.0	393.3	387.6	390.6	392.8	386.8	383.6	384.7	383.8	377.2
15	380.5	383.4	384.1	391.7	388.8	390.6	392.8	386.6	383.4	384.5	383.7	377.8
16	380.3	383.4	384.1	390.8	389.5	390.6	393.1	386.4	383.3	384.3	383.6	378.1
17	380.1	383.3	384.4	390.0	389.2	390.9	393.1	386.2	383.2	384.2	383.5	378.4
18	380.0	383.3	384.9	389.1	388.6	391.9	393.2	386.0	383.1	384.2	383.3	378.6
19	379.7	383.3	385.0	388.7	388.2	392.9	392.7	386.0	383.0	384.0	383.1	378.7
20	379.7	383.2	385.0	388.5	388.2	393.3	392.1	385.7	383.0	383.8	382.9	378.8
21	379.7	381.6	385.0	388.1	389.9	393.7	391.6	385.6	382.9	383.6	382.9	378.9
22	379.9	379.6	384.3	388.1	390.3	394.0	391.2	385.4	382.9	383.6	382.8	378.9
23	379.9	379.4	384.2	388.1	389.6	394.1	390.8	385.3	382.8	383.7	382.8	378.9
24	380.0	379.2	384.0	387.6	389.2	394.3	390.4	385.1	382.8	383.7	382.6	378.9
25	380.1	378.9	383.9	387.4	389.1	394.5	390.1	385.0	382.7	383.7	382.4	379.0
26	380.8	379.8	384.1	387.4	388.8	394.7	389.9	385.0	382.6	383.8	382.2	379.2
27	381.1	380.2	384.2	387.4	388.7	395.2	389.6	384.9	382.6	383.9	381.9	379.2
28	381.1	380.9	384.2	387.3	389.1	395.5	389.3	384.9	382.6	383.9	381.8	379.2
29	380.6		384.2	387.2	389.6	395.8	389.3	385.0	382.6	383.7	381.6	379.6
30	380.3		384.1	386.9	389.9	396.0	389.3	385.0	382.6	383.3	381.5	379.8
31	380.3		384.1		390.0		389.3	384.9	382.6	383.3		379.8

Missouri River.—St. Joseph, Mo., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	379.9	383.8	384.1	387.6	487.3	392.1	396.8	390.4	387.2	384.1	384.9	382.2
2	380.0	383.8	382.9	387.7	487.4	392.3	396.3	390.3	387.0	384.1	384.8	382.0
3	380.3	383.8	384.3	388.0	387.5	393.4	395.8	390.2	386.8	384.0	384.5	381.5
4	381.0	383.3	384.8	388.0	387.4	393.9	395.5	390.2	386.7	384.3	384.5	381.6
5	381.7	382.9	385.9	388.1	386.9	394.3	395.1	390.0	386.4	384.5	384.5	381.5
6	381.9	382.9	386.2	388.3	386.7	393.9	395.1	389.6	386.2	384.7	384.5	381.5
7	382.0	382.6	385.5	388.2	386.7	393.5	395.3	389.1	386.0	384.8	384.5	381.7
8	382.6	382.3	385.1	387.9	386.7	393.5	395.2	389.0	385.8	384.7	384.6	381.8
9	383.0	382.3	385.1	387.8	386.9	393.6	395.1	389.1	385.7	384.5	384.6	381.8
10	383.1	382.3	385.6	387.6	387.4	393.4	395.4	389.3	385.7	384.3	384.5	381.9
11	383.2	382.1	387.4	387.6	387.5	393.0	395.7	389.0	385.5	384.2	384.4	381.9
12	383.5	382.1	387.0	387.4	388.3	393.5	395.8	388.9	385.3	384.0	384.4	382.1
13	383.6	382.1	386.4	387.4	388.8	393.4	395.7	389.1	385.2	383.9	384.4	382.2
14	383.6	382.4	387.0	388.3	389.6	393.0	395.6	389.0	384.7	383.8	381.3	382.2
15	383.6	382.9	387.6	388.8	389.9	393.0	395.2	388.9	384.6	383.7	384.2	382.4
16	383.6	384.2	388.1	388.6	391.0	393.6	394.7	389.1	384.6	383.4	383.9	382.5
17	383.6	385.5	387.8	390.3	391.6	395.5	394.2	389.1	384.5	383.4	383.5	382.5
18	383.4	386.0	387.7	390.9	392.4	396.8	393.8	389.4	384.5	383.8	383.0	381.1
19	383.4	385.9	388.2	392.3	392.8	397.5	393.2	390.1	384.4	384.4	382.8	379.0
20	383.4	385.5	388.1	392.7	392.4	396.8	392.9	390.2	384.3	384.9	382.6	....
21	383.4	385.3	387.4	391.3	392.0	396.5	392.5	389.7	384.3	384.8	382.4	....
22	383.4	385.0	386.4	390.1	391.6	396.6	392.0	389.2	384.3	384.5	383.0	378.6
23	383.4	384.9	386.1	389.3	391.3	397.0	391.8	388.9	384.3	384.4	383.5	....
24	383.4	385.3	386.1	389.7	391.2	397.4	391.6	388.8	384.4	384.5	383.5	378.5
25	383.5	385.7	385.9	388.3	393.9	398.2	391.6	388.6	384.5	384.5	383.3	378.3
26	383.6	386.2	388.6	388.2	394.8	398.6	391.4	388.3	384.5	384.6	383.2	378.2
27	383.6	386.2	389.1	388.2	394.5	398.1	391.2	388.2	384.6	384.8	383.2	378.3
28	383.7	385.9	388.8	388.0	393.6	397.6	391.0	388.0	384.5	385.1	382.8	379.0
29	383.8	388.5	388.5	387.6	393.3	397.4	390.7	387.7	384.3	385.1	382.5	379.0
30	383.8	388.1	388.1	387.4	393.2	397.2	390.6	387.7	384.2	385.0	382.3	....
31	383.8	387.8	387.8	387.4	392.6	397.2	390.6	387.4	384.2	385.0	382.3	....

Missouri River.—St. Joseph, Mo., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	378.8	382.7	383.6	.....	388.5	390.0	392.6	390.0	387.4	385.5	385.1	383.6
2	378.9	382.7	383.9	391.0	389.0	390.4	392.8	389.8	387.3	385.6	385.1	383.5
3	379.4	382.9	384.1	392.6	388.9	390.5	393.2	389.6	387.4	385.8	385.1	383.5
4	380.1	382.9	384.3	393.7	389.0	390.7	393.5	389.4	387.1	385.8	385.1	383.8
5	380.8	382.9	384.5	394.4	389.3	390.8	393.6	389.1	386.9	386.6	385.0	383.6
6	381.2	382.8	384.7	395.0	389.5	390.7	393.6	388.7	386.8	387.7	385.0	383.3
7	381.9	382.8	384.7	395.3	389.6	390.8	393.3	388.4	386.6	388.2	384.9	383.1
8	382.7	382.8	385.1	395.3	389.5	391.0	392.8	388.2	386.7	387.9	384.8	383.1
9	382.7	383.0	385.0	394.4	389.1	391.4	392.7	388.1	386.9	387.4	384.8	383.1
10	383.0	383.0	384.8	393.3	388.8	391.8	392.6	388.0	386.6	387.3	384.8	383.0
11	382.9	383.0	384.7	392.0	388.5	391.7	392.4	387.9	386.4	387.2	384.7	383.0
12	383.3	382.8	385.1	392.1	388.5	391.7	392.3	387.7	386.1	387.5	384.6	382.9
13	383.4	382.4	384.7	391.6	388.6	392.0	392.5	387.5	386.0	388.1	384.8	382.8
14	383.4	382.4	384.4	390.4	388.3	392.0	392.3	387.4	386.0	388.1	384.9	383.0
15	383.7	382.3	384.5	390.1	387.8	392.2	392.0	387.4	386.0	387.8	384.9	382.7
16	383.6	382.3	385.4	389.8	387.6	392.6	391.8	387.5	386.1	387.4	384.8	382.4
17	383.7	382.1	386.4	389.4	387.4	392.9	391.7	387.4	386.2	386.9	384.8	382.0
18	383.8	382.2	386.0	389.3	387.5	393.4	391.5	387.3	386.1	386.5	384.8	381.7
19	383.9	382.5	386.3	389.6	387.5	393.8	391.3	387.4	386.0	386.3	384.7	381.5
20	383.9	382.6	386.9	390.0	387.5	394.1	391.1	387.6	385.9	386.1	384.7	381.4
21	384.0	382.7	387.3	390.0	387.4	394.4	391.0	387.3	385.9	385.8	384.7	381.6
22	383.8	382.7	387.4	389.4	387.7	394.6	390.9	387.2	385.8	385.5	384.7	381.8
23	383.9	382.7	387.8	388.8	388.1	394.7	390.9	387.4	385.9	385.3	384.7	382.0
24	383.7	382.8	389.7	388.4	388.6	394.7	391.1	387.7	385.9	385.2	384.6	382.4
25	383.7	383.1	394.7	388.1	388.8	394.5	391.1	387.7	386.1	385.1	385.0	382.5
26	383.5	383.0	.....	388.0	388.7	394.0	390.9	387.5	386.1	385.2	385.1	382.7
27	383.3	383.1	.....	387.8	388.7	393.6	391.1	387.6	386.2	385.4	384.4	382.9
28	383.2	383.2	.....	387.7	389.1	393.3	390.8	387.5	385.7	385.3	383.9	383.0
29	383.0	383.4	.....	388.3	389.7	393.0	390.7	387.5	385.7	385.3	383.6	383.1
30	382.8	.....	.....	388.1	389.9	392.8	390.4	387.3	385.4	385.2	383.6	383.2
31	382.7	.....	.....	.....	390.0	.....	390.1	387.5	.....	385.2	.....	383.3

Missouri River.—St. Joseph, Mo., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	383.50	384.65	385.45	388.30	389.45	389.75	393.05	390.50	388.55	385.40	385.05	384.60
2	383.55	384.77	386.00	388.40	389.40	390.10	392.95	390.45	388.25	385.30	384.90	384.60
3	383.60	385.15	386.55	388.50	389.15	390.25	392.90	390.35	388.00	385.30	384.85	384.60
4	383.60	385.65	387.00	388.50	388.80	390.55	392.80	390.25	387.75	385.60	384.75	384.70
5	383.55	386.30	387.70	388.70	388.45	390.60	392.70	390.05	387.50	385.40	384.60	384.75
6	383.60	386.85	388.50	388.95	388.25	390.75	392.75	389.95	387.15	385.25	384.55	384.75
7	383.65	387.20	388.65	388.75	388.10	390.80	392.75	389.85	387.10	385.10	384.50	384.80
8	383.70	387.50	388.95	388.70	387.90	390.90	392.55	389.80	387.25	385.05	384.50	384.70
9	383.85	387.50	388.55	388.55	387.80	391.30	392.65	389.75	387.25	384.95	384.55	384.70
10	383.85	387.35	388.40	388.45	387.75	392.10	392.85	389.70	387.10	385.10	384.60	384.25
11	383.85	387.20	388.65	388.40	387.65	392.50	392.95	389.60	387.05	385.25	384.65	384.20
12	384.05	387.15	389.15	388.70	387.45	392.90	392.65	389.45	387.20	385.15	384.80	384.10
13	384.10	387.25	389.15	389.95	387.20	392.90	392.20	389.40	387.25	385.10	384.95	383.15
14	384.40	387.30	389.10	389.15	387.05	393.40	391.85	389.35	387.30	385.05	385.05	382.30
15	384.70	387.55	389.15	389.75	386.90	393.80	391.40	389.30	387.40	385.00	385.10	382.20
16	384.80	387.45	388.90	389.90	386.90	394.30	391.25	389.40	387.40	384.95	385.05	382.10
17	384.90	387.25	388.70	389.45	387.30	394.70	391.00	389.15	387.45	385.00	385.00	382.10
18	384.95	386.85	388.50	388.80	387.90	395.00	390.85	388.80	387.20	385.10	385.00	382.00
19	384.80	386.50	388.35	388.30	388.60	394.80	390.95	388.30	387.15	385.15	384.95	382.00
20	384.75	386.05	388.15	387.90	388.75	394.65	391.15	388.10	386.95	385.25	384.90	382.00
21	384.75	385.90	387.90	387.70	388.55	394.85	391.20	387.95	386.70	385.15	385.00	381.90
22	384.65	385.90	387.75	387.25	388.70	394.90	391.05	387.90	386.60	385.10	385.00	381.90
23	384.60	385.75	387.70	386.75	389.20	394.55	390.90	387.95	386.60	385.00	385.00	381.85
24	384.55	385.65	388.00	386.30	389.50	394.35	391.00	388.10	386.15	384.90	384.90	382.00
25	384.55	385.60	389.10	386.05	389.80	394.10	390.90	388.35	385.90	384.80	384.75	382.30
26	384.65	385.60	389.55	386.60	389.70	393.90	390.85	388.45	385.90	384.70	384.70	382.55
27	384.65	385.45	389.05	387.95	389.65	393.85	390.75	388.50	385.80	384.65	384.60	384.15
28	384.55	385.35	388.65	388.85	389.45	393.60	390.75	388.60	385.70	384.75	384.60	384.95
29	384.55		388.50	389.20	389.40	393.40	390.75	388.60	385.50	384.95	384.60	385.00
30	384.60		388.30	389.40	389.40	393.25	390.65	388.60	385.40	385.05	384.50	384.90
31	384.65		388.30		389.55		390.60	388.70		385.15		384.75

Missouri River.—White Cloud, Kan., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					437.2	432.4	433.1	426.7	422.6	422.5	424.3	420.4
2					435.9	432.3	432.5	426.5	422.6	422.7	424.5	420.4
3					434.0	432.0	431.9	426.3	422.6	422.7	424.5	420.5
4					432.6	431.7	431.3	426.0	422.5	422.8	424.5	420.3
5					431.8	431.6	430.7	425.7	422.5	422.8	424.5	420.3
6					431.0	431.2	430.0	425.7	422.5	422.8	424.5	420.4
7					430.8	430.9	429.7	425.7	422.5	422.8	424.4	420.4
8					430.6	431.0	429.6	425.2	422.5	422.8	424.4	420.7
9					430.6	431.4	429.6	425.1	422.7	422.9	424.3	420.8
10				434.7	430.3	431.4	430.0	424.9	423.5	423.0	424.3	420.9
11				435.1	430.1	431.3	430.5	424.8	424.0	423.0	424.2	420.9
12				435.2	430.1	431.6	430.9	424.7	423.8	423.0	424.1	421.2
13				434.7	430.3	431.9	430.9	424.6	423.5	423.0	424.0	421.2
14				433.4	430.3	432.2	430.9	424.5	423.3	423.1	423.9	421.1
15				432.7	430.0	433.3	430.8	424.1	423.1	423.1	423.9	421.1
16				432.4	429.8	433.7	430.6	424.1	423.1	423.1	423.8	421.1
17				432.4	429.6	433.6	430.1	424.0	423.1	423.2	423.8	421.2
18				432.7	429.5	433.0	429.7	423.9	423.2	423.2	423.7	421.2
19				433.4	429.6	432.6	429.2	423.6	423.3	423.2	423.1	421.2
20				434.0	430.5	431.9	429.1	423.5	423.1	423.2	422.4	421.2
21				434.8	431.2	432.0	429.1	423.4	422.9	423.1	422.2	421.2
22				435.4	431.2	431.6	428.9	423.3	422.7	423.2	422.1	421.2
23				436.0	430.7	431.6	428.4	423.1	422.5	423.2	422.0	421.3
24				436.3	430.1	431.5	428.0	422.9	422.3	423.2	421.8	421.3
25				436.8	429.7	431.0	427.7	422.8	422.1	423.3	421.4	421.3
26				437.4	429.5	430.9	427.6	422.7	422.1	423.3	421.2	421.3
27				438.2	429.3	431.9	427.6	422.6	422.1	423.6	420.9	421.2
28				438.5	429.2	432.4	427.3	422.5	422.1	424.0	420.5	421.0
29				438.4	429.6	432.1	426.9	422.7	422.1	424.2	420.3	420.4
30				438.0	430.8	432.7	426.9	422.7	422.3	424.3	420.4	419.9
31					431.8	....	426.9	422.6	....	424.3	....	419.7

Missouri River.—White Cloud, Kan., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	419.5	420.6	421.8	422.4	426.3	427.6	434.4	427.8	423.0	420.6	421.4	419.5
2	419.5	420.5	422.7	423.2	426.6	427.2	434.3	427.5	422.9	420.6	421.3	419.4
3	419.4	420.6	423.2	423.1	426.2	426.9	434.2	427.1	422.9	420.6	421.2	419.2
4	419.2	420.6	424.0	422.9	425.8	426.7	434.2	426.8	422.7	420.6	421.1	419.2
5	419.2	420.6	424.1	423.1	425.3	426.4	433.9	426.6	422.6	420.7	421.1	419.2
6	419.3	420.5	424.1	423.4	425.2	426.2	433.4	426.4	422.6	420.7	421.1	419.0
7	419.3	420.6	424.1	423.9	425.2	425.9	432.9	426.4	422.3	420.9	421.2	420.2
8	419.3	420.7	424.1	424.6	425.2	425.8	432.7	426.3	422.2	420.9	421.2	420.0
9	419.2	420.8	423.5	425.1	425.3	426.2	432.4	426.3	422.0	421.0	421.2	419.7
10	419.3	421.3	422.2	426.4	425.3	426.4	432.2	426.1	421.9	421.0	421.2	419.7
11	419.4	422.0	421.6	427.9	425.4	426.7	431.8	425.8	421.8	421.2	421.2	419.6
12	419.3	422.7	421.6	430.2	425.6	427.5	431.9	425.6	421.6	422.1	421.4	419.8
13	419.4	423.1	422.2	429.6	425.8	428.9	432.1	425.2	421.6	422.6	421.8	419.7
14	419.4	423.0	422.0	428.6	426.1	429.1	432.0	425.0	421.5	422.5	421.9	420.2
15	419.4	423.2	422.2	427.9	427.0	429.1	432.0	424.9	421.4	422.2	421.8	420.1
16	419.4	423.3	421.9	427.3	427.7	429.2	432.0	424.7	421.3	422.3	421.7	420.1
17	419.4	423.3	422.9	426.8	427.2	429.2	432.0	424.6	421.2	422.2	421.6	420.5
18	419.3	423.3	423.2	426.6	426.8	429.5	431.9	424.4	421.1	422.2	421.3	420.5
19	419.8	423.2	423.5	426.3	426.5	430.5	431.4	424.3	421.0	421.9	421.0	420.5
20	420.1	422.9	423.1	426.3	427.0	431.7	430.8	424.3	421.0	421.7	420.8	420.5
21	420.4	422.7	422.7	426.4	428.0	431.8	430.4	424.2	420.9	421.7	420.7	420.4
22	420.6	422.5	422.2	426.3	428.2	431.9	429.9	424.0	420.8	421.7	420.8	420.5
23	421.1	421.1	422.2	425.9	427.6	432.4	429.4	423.8	420.7	421.8	420.8	420.5
24	420.6	420.2	422.0	425.8	427.5	432.6	429.0	423.6	420.7	421.9	420.6	420.5
25	420.3	419.2	422.0	425.7	427.2	432.9	428.8	423.5	420.6	421.9	420.5	420.5
26	420.1	418.6	422.1	425.7	427.1	433.1	428.4	423.3	420.6	422.1	420.3	420.4
27	420.0	420.8	422.3	425.6	427.2	433.3	428.2	423.3	420.6	422.2	420.0	420.4
28	420.0	421.2	422.3	425.4	427.6	433.7	427.9	423.3	420.6	422.0	419.8	420.4
29	420.3		422.1	425.3	428.1	434.1	428.0	423.3	420.6	421.8	419.6	420.4
30	420.4		421.9	425.4	428.3	434.2	427.9	423.3	420.6	421.6	419.6	420.4
31	420.6		422.0	425.4	428.1		427.9	423.2	420.6	421.5		420.4

Missouri River.—White Cloud, Kan., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	420.4	420.8	423.2	425.8	425.6	430.4	435.7	.....	423.2	420.9	421.8	418.9
2	420.3	420.9	423.2	425.8	425.6	430.9	435.1	.....	423.0	420.9	421.6	418.8
3	420.3	420.9	423.0	425.9	425.7	431.9	434.7	.....	422.8	420.9	421.4	418.6
4	420.3	420.9	423.6	425.8	425.5	432.4	434.4	.....	422.7	421.0	421.4	418.7
5	420.3	420.9	424.5	426.1	425.3	432.6	434.1	.....	422.5	421.2	421.5	418.9
6	420.2	420.9	423.6	426.3	425.2	432.3	434.2	.....	422.3	421.3	421.5	419.1
7	420.2	420.8	422.8	426.1	425.0	432.1	434.3	.....	422.2	421.3	421.6	419.1
8	420.3	420.9	422.4	426.0	425.2	432.2	434.4	.....	422.0	421.2	421.6	419.4
9	420.3	420.9	422.6	426.0	425.5	432.3	434.5	.....	421.8	421.1	421.6	419.4
10	420.3	420.9	424.7	426.0	425.7	432.0	434.8	.....	421.6	421.0	421.6	419.4
11	420.3	420.9	425.5	425.9	426.3	431.8	435.3	.....	421.4	420.8	421.6	419.6
12	420.3	420.9	424.6	425.7	426.9	432.0	435.3	.....	421.4	420.7	421.6	419.8
13	420.4	420.9	424.6	425.8	427.3	431.7	435.0	.....	421.2	420.6	421.5	419.9
14	420.4	421.1	425.4	426.5	427.9	431.4	434.6	.....	421.2	420.4	421.4	419.8
15	420.5	421.9	425.7	426.6	428.8	431.8	434.0	.....	421.1	420.5	421.3	419.8
16	420.6	422.5	426.0	427.2	429.4	432.3	433.3	.....	421.0	420.5	421.1	419.9
17	420.6	422.8	425.9	428.8	429.6	434.1	432.6	.....	421.0	420.7	421.0	419.8
18	420.6	422.9	426.0	429.2	430.4	435.4	431.9	.....	420.9	420.8	420.5	419.0
19	420.6	422.9	426.2	431.0	430.8	435.3	431.1	.....	420.9	421.3	420.0	418.8
20	420.6	422.9	426.1	430.5	430.5	434.7	430.7	.....	420.9	421.6	419.8	418.3
21	420.6	422.6	425.5	429.2	429.9	434.7	430.2	.....	420.9	421.4	420.0	418.2
22	420.6	422.4	424.6	428.8	429.6	435.3	429.7	.....	420.8	421.2	420.2	419.1
23	420.6	422.5	424.4	428.3	429.7	436.3	429.3	425.2	420.8	421.2	420.4	420.3
24	420.6	422.8	424.4	427.3	430.5	436.6	429.2	424.9	420.9	421.2	420.6	420.8
25	420.6	423.2	425.4	426.5	433.0	436.5	428.9	424.6	421.1	421.2	420.6	421.3
26	420.7	423.2	426.8	426.3	433.3	436.3	428.6	424.4	421.2	421.5	420.4	420.6
27	420.8	423.1	426.5	426.2	432.7	436.3	428.4	424.2	421.2	421.7	420.0	419.5
28	420.8	423.3	425.9	426.3	432.0	436.3	428.1	424.0	421.2	421.9	419.7	418.6
29	420.8		426.0	426.3	431.6	436.2	427.8	423.9	421.1	421.9	419.2	418.5
30	420.8		426.0	425.7	431.3	436.1	428.0	423.7	421.0	421.9	419.0	.....
31	420.8		425.8	430.8	430.8		.....	423.3		421.8		.....

Missouri River.—White Cloud, Kan., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	419.7	421.3	422.3	430.7	426.6	429.6	432.9	428.9	424.9	423.6	422.6	419.9
2	419.9	421.3	422.4	431.2	426.8	429.9	433.4	428.6	424.7	423.7	422.6	420.0
3	420.3	421.3	422.3	431.3	426.9	430.0	433.9	428.2	424.5	423.7	422.4	420.2
4	420.7	421.3	422.4	432.2	427.1	429.9	434.1	427.9	424.4	423.8	422.3	420.3
5	420.7	421.3	422.6	433.9	427.5	430.2	434.3	427.6	424.1	424.0	422.2	420.5
6	420.7	421.3	422.9	434.2	428.0	430.8	434.1	427.1	423.9	424.5	422.2	420.8
7	420.8	421.2	423.0	434.4	428.4	431.6	433.6	426.7	423.9	424.7	422.1	420.9
8	420.9	421.2	423.1	434.8	427.9	432.3	433.2	426.1	423.8	424.6	422.0	421.0
9	421.1	421.2	423.1	434.8	427.2	432.6	432.6	425.7	423.6	424.5	421.9	421.0
10	421.4	421.2	423.1	433.0	426.9	432.6	431.9	425.2	423.5	424.4	421.9	420.9
11	421.5	421.2	421.5	431.7	426.6	432.6	431.7	425.0	423.5	424.3	421.9	420.6
12	421.7	421.2	421.8	431.3	426.3	432.6	431.4	424.8	423.4	424.2	421.9	420.1
13	421.8	421.2	421.6	431.2	425.9	432.6	431.1	424.6	423.4	424.4	421.9	419.9
14	421.9	421.2	421.5	430.9	425.6	432.7	430.9	424.6	423.4	424.1	421.9	419.4
15	421.9	421.2	421.6	430.3	425.5	432.8	430.8	424.5	423.5	423.8	421.9	418.8
16	422.0	421.3	422.8	429.4	425.5	433.2	430.5	424.5	423.6	423.6	421.9	417.7
17	422.0	421.3	424.4	428.4	425.5	434.2	430.2	424.4	423.8	423.4	421.9	415.9
18	422.1	421.3	422.4	428.1	425.4	434.6	430.1	424.4	423.7	423.1	421.9	415.7
19	422.1	421.3	423.7	428.2	425.3	434.7	430.0	424.3	423.5	422.9	421.9	417.3
20	422.2	421.2	425.0	428.0	425.0	434.9	429.9	424.3	423.4	422.8	421.9	417.8
21	422.3	421.3	425.1	427.6	425.0	435.1	429.8	424.3	423.3	422.7	421.8	417.9
22	422.3	421.3	425.2	427.1	425.4	435.6	429.6	424.3	423.2	422.5	421.8	417.9
23	422.2	421.3	426.5	426.7	425.7	435.7	429.6	424.2	423.1	422.4	421.8	418.1
24	422.0	421.3	429.2	426.2	426.2	435.6	429.5	424.1	423.0	422.3	421.3	418.4
25	421.9	421.5	432.7	425.7	426.8	435.5	429.4	424.0	423.0	422.2	421.5	418.9
26	421.6	421.6	430.8	425.5	427.3	434.7	429.6	424.2	423.2	422.2	420.0	419.2
27	421.5	421.7	430.4	425.4	427.1	433.7	429.4	424.5	423.4	422.3	419.5	419.3
28	421.2	421.8	430.2	425.4	427.4	433.1	429.3	424.7	423.5	422.3	419.4	419.5
29	421.1	422.1	430.4	425.5	428.1	432.8	429.5	424.9	423.5	422.3	419.3	419.5
30	421.2		430.4	425.8	428.8	432.6	429.2	424.9	423.6	422.4	419.6	419.5
31	421.2		430.4	429.3	429.3	432.6	428.9	425.0	423.6	422.5		419.5

Missouri River.—White Cloud, Kas., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	419.57	421.05	422.42	426.17	427.45	428.75	431.85	428.65	424.00	421.80	421.63	421.50
2	419.72	421.05	423.40	426.35	427.25	428.60	432.00	427.95	424.05	421.62	421.60	421.50
3	419.87	421.10	424.40	426.40	426.90	428.58	431.87	427.62	424.05	421.53	421.60	421.50
4	420.10	421.67	425.12	426.20	426.52	429.00	431.88	427.45	424.07	421.45	421.35	421.82
5	420.57	422.25	425.57	426.18	426.53	429.62	432.10	427.40	424.02	421.42	421.22	421.70
6	421.03	422.92	425.95	426.80	426.70	429.85	432.20	427.40	423.90	421.45	421.20	421.72
7	421.40	423.20	426.35	427.00	426.57	429.80	432.02	427.50	423.80	421.33	421.25	420.45
8	421.40	423.35	425.57	427.15	426.35	429.65	431.87	427.65	423.83	421.25	421.37	418.75
9	421.40	423.32	424.90	427.10	426.22	429.72	431.65	427.53	423.75	421.17	421.65	417.82
10	421.37	423.13	425.12	426.62	426.07	432.60	431.45	427.87	423.90	421.07	421.80	417.17
11	421.18	423.10	426.95	426.82	425.97	433.20	431.20	427.75	423.95	420.95	421.95	417.97
12	421.15	422.80	427.00	427.32	425.95	433.15	431.20	427.83	423.93	421.10	422.10	418.55
13	421.10	422.35	427.50	427.45	425.90	433.07	431.12	427.35	424.20	421.27	421.97	420.02
14	420.93	422.10	427.65	428.45	425.83	433.30	430.92	427.15	424.25	421.47	421.85	421.35
15	420.90	422.05	428.20	428.40	425.75	434.20	430.65	426.60	424.15	421.45	421.72	421.30
16	420.90	422.05	428.40	428.27	425.83	435.03	430.37	426.20	424.12	421.40	421.72	421.57
17	420.80	422.00	427.85	427.65	426.05	435.25	430.15	425.75	424.20	421.45	421.75	421.65
18	420.75	421.90	427.97	426.80	427.00	435.17	429.92	425.50	424.12	421.45	421.90	421.65
19	420.75	421.82	427.02	425.87	427.12	434.55	429.57	425.30	423.83	421.45	421.90	421.57
20	420.75	421.80	426.40	425.20	427.00	433.95	429.30	425.07	423.50	421.32	421.83	421.50
21	420.85	421.75	426.07	424.70	426.87	433.87	429.17	424.93	423.25	421.22	421.77	421.65
22	420.87	421.75	425.75	424.77	427.05	433.72	429.20	424.85	423.20	421.20	421.70	421.20
23	420.90	421.72	425.45	425.18	427.90	433.35	429.40	424.75	423.07	421.20	421.78	420.30
24	420.90	421.70	426.35	425.75	427.85	433.02	429.80	424.90	422.97	421.25	421.80	419.75
25	420.90	421.60	427.27	426.30	427.60	432.85	430.00	425.02	422.72	421.23	421.78	420.05
26	420.85	421.55	426.50	426.50	427.80	432.88	429.85	424.90	422.42	421.17	421.70	420.83
27	420.85	421.55	426.20	426.50	427.47	432.80	429.67	424.65	422.25	421.12	421.70	422.30
28	420.87	421.67	426.20	426.72	427.60	432.50	429.40	424.47	422.17	421.42	421.67	421.70
29	420.90		426.15	427.03	427.93	432.10	429.28	424.27	422.07	421.45	421.60	421.55
30	420.90		426.05	427.10	428.00	431.85	429.10	424.15	421.90	421.75	421.55	422.10
31	421.00		426.05	427.10	428.35		429.12	424.05		421.67		421.95

H. E. K. 28—17

Missouri River.—Brownville, Neb., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									470.0	467.1	466.6	467.7
2									470.4	467.0	466.6	467.7
3									470.9	466.9	466.6	467.8
4									471.1	466.8	466.7	467.8
5									470.9	467.7	466.7	467.7
6									470.2	466.6	466.7	467.5
7									469.7	466.6	466.7	467.4
8									469.4	466.6	466.7	467.3
9									469.3	466.6	466.7	467.4
10									469.1	466.6	466.7	467.4
11									469.0	466.7	466.8	467.5
12									468.9	466.6	466.8	467.6
13									468.8	466.6	466.7	467.6
14									468.6	466.5	466.7	467.6
15									468.2	466.6	466.6	467.8
16									468.2	466.6	466.6	467.7
17									468.0	466.9	466.5	467.7
18									468.0	466.8	466.3	467.6
19									467.9	467.0	469.2	467.5
20									467.7	467.0	468.4	467.4
21									467.6	466.9	468.4	467.5
22									467.6	466.8	467.9	467.4
23								470.3	467.6	466.8	467.5	467.4
24								470.2	467.5	466.7	467.5	467.3
25								469.8	467.6	466.8	467.6	467.2
26								469.5	467.9	466.8	467.6	467.2
27								469.6	467.7	466.8	467.6	467.1
28								469.8	467.4	466.7	467.6	467.0
29								470.0	467.3	466.6	467.6	466.9
30								469.8	467.3	466.6	467.7	466.8
31								469.7	467.3	466.6	467.7	466.8

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	466.9	467.3	468.1	474.2	479.5	476.2	476.5	471.1	467.9	467.5	468.7	467.0
2	467.0	467.2	468.1	473.7	477.9	476.1	475.9	470.9	467.8	467.6	468.8	466.8
3	467.0	467.2	468.2	474.8	476.6	475.7	475.1	470.6	467.8	467.6	468.9	466.5
4	467.1	467.3	468.2	475.6	475.8	475.5	474.6	470.5	467.8	467.6	478.7	466.5
5	467.1	467.4	468.2	475.9	475.2	475.4	473.8	470.4	467.7	467.7	468.6	466.6
6	467.0	467.6	468.3	476.4	474.6	474.9	473.2	470.3	467.7	467.8	468.7	466.7
7	467.1	467.6	468.3	476.8	474.4	474.7	473.1	470.2	467.8	467.7	468.8	466.5
8	467.0	467.7	468.4	477.5	474.2	475.1	473.1	470.2	467.8	467.7	469.0	466.5
9	467.0	467.8	468.5	478.3	474.0	475.4	473.3	470.0	468.0	467.8	468.9	466.5
10	467.1	467.8	468.5	478.8	473.6	475.3	473.7	469.8	468.7	467.7	468.7	466.5
11	467.1	467.9	468.5	478.9	473.5	475.3	474.4	469.5	468.8	467.7	468.6	466.3
12	467.2	467.9	469.3	478.6	473.5	475.6	474.6	469.4	468.8	467.8	468.5	466.3
13	467.2	467.8	471.2	477.6	473.5	475.9	474.5	469.3	468.3	468.0	468.4	466.3
14	467.3	467.8	472.6	476.4	473.4	476.5	474.5	469.3	468.2	467.7	468.2	466.3
15	467.3	467.8	472.8	475.9	473.5	477.6	474.2	469.1	468.1	467.6	468.1	466.2
16	467.4	467.8	473.2	476.0	473.3	477.8	473.8	469.1	468.1	467.7	468.0	466.2
17	467.5	467.8	473.4	476.0	472.8	477.4	473.4	469.0	468.2	467.7	468.0	466.1
18	467.5	467.8	473.4	476.6	472.6	476.8	473.1	468.9	468.3	467.7	467.9	466.1
19	467.6	467.9	473.8	477.7	473.0	476.1	472.9	468.8	468.2	467.7	467.7	465.9
20	467.6	467.8	474.0	478.2	474.2	475.4	472.8	468.6	468.1	467.8	467.2	466.1
21	467.6	467.9	474.2	479.0	474.6	475.1	472.8	468.5	467.9	467.8	467.7	466.4
22	467.6	467.9	473.7	479.7	474.6	474.8	472.6	468.3	467.7	467.8	466.4	466.8
23	467.6	467.9	473.4	480.3	474.0	474.8	472.0	468.1	467.5	467.9	466.3	466.9
24	467.7	467.9	473.0	480.9	473.5	474.4	471.8	468.1	467.4	468.1	465.9	466.7
25	467.7	468.0	471.2	481.3	473.0	474.2	471.6	468.0	467.4	468.2	465.7	466.6
26	467.7	468.0	471.8	481.6	472.9	474.4	471.6	467.8	467.4	468.2	465.7	466.5
27	467.7	468.0	472.3	481.6	472.7	475.5	471.6	467.8	467.3	468.2	466.0	466.5
28	467.5	468.1	476.3	481.5	472.5	475.7	471.4	467.8	467.3	468.4	466.1	466.5
29	467.5		476.2	481.3	473.3	475.7	471.2	467.8	467.3	468.6	466.6	466.5
30	467.4		474.8	480.6	474.9	476.4	471.2	467.8	467.4	468.6	466.9	467.0
31	467.4		475.1		476.0		471.2	467.8		468.6		466.0

Missouri River.—Brownville, Neb., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	465.1	469.7	468.1	469.3	471.4	472.0	477.4	471.8	467.9	466.1	467.1	465.2
2	465.1	469.5	468.7	469.6	471.3	471.8	477.0	471.5	467.9	466.2	467.0	465.1
3	464.4	469.1	468.9	469.5	470.8	471.6	476.8	471.1	467.8	466.3	466.9	464.9
4	463.6	468.7	469.1	469.2	470.5	471.3	476.3	471.0	467.8	466.4	466.9	464.6
5	463.9	468.2	469.7	469.5	470.1	471.0	475.9	471.0	467.7	466.4	466.9	464.5
6	464.1	467.7	470.0	469.6	470.0	470.8	475.4	470.9	467.6	466.5	467.1	464.4
7	464.1	467.8	469.6	469.8	469.9	470.6	475.1	470.9	467.6	466.5	467.0	462.8
8	464.4	467.8	468.8	470.1	470.0	470.6	475.0	470.8	467.6	466.6	467.0	462.2
9	464.9	467.5	467.8	470.8	470.1	470.7	474.8	470.7	467.5	466.7	467.0	462.1
10	465.0	467.5	467.7	471.8	470.2	470.9	474.6	470.5	467.4	466.8	467.1	462.8
11	465.4	468.0	467.9	474.4	470.5	471.4	474.5	470.3	467.3	467.1	467.1	463.8
12	465.3	468.3	468.2	475.6	470.7	472.4	474.6	470.0	467.1	467.9	467.3	463.7
13	465.5	468.6	468.4	475.0	470.8	473.1	474.7	469.7	467.1	467.9	467.6	464.8
14	465.8	468.6	468.6	474.3	471.7	473.2	474.5	469.6	467.0	467.8	467.6	465.3
15	465.8	467.9	468.5	474.1	472.8	473.1	474.6	469.5	467.0	467.5	467.4	466.2
16	465.4	467.2	468.8	473.2	472.5	473.3	474.8	469.1	466.9	467.7	467.3	466.7
17	465.7	467.2	469.6	473.1	471.9	473.6	474.9	469.0	466.8	467.7	467.3	466.5
18	466.1	467.2	469.7	472.9	471.5	474.5	474.7	468.8	466.6	467.4	467.1	466.2
19	467.4	466.9	469.6	472.8	471.1	475.3	474.1	468.7	466.6	467.3	467.0	466.1
20	467.5	466.8	469.0	472.7	472.5	475.8	473.9	468.6	466.5	467.2	467.0	465.9
21	467.5	468.3	468.8	472.7	473.1	475.5	473.5	468.5	466.4	467.1	467.0	465.8
22	468.9	467.6	468.6	472.6	472.8	475.8	473.1	468.4	466.4	467.2	466.9	465.8
23	469.0	467.0	468.5	472.5	472.4	476.1	472.7	468.2	466.3	467.3	466.8	465.8
24	467.5	467.3	468.5	471.3	472.0	476.2	472.5	468.2	466.3	467.3	466.6	466.0
25	468.0	466.9	468.6	471.2	471.8	476.4	472.2	468.1	466.3	467.5	466.3	466.2
26	468.5	467.8	468.7	471.1	471.6	476.6	471.8	468.1	466.2	467.6	466.1	466.3
27	468.5	467.5	468.9	471.1	472.1	476.8	471.6	468.1	466.2	467.7	465.9	466.4
28	468.5	467.5	468.8	471.0	472.5	477.0	471.8	468.1	466.2	467.4	465.7	466.8
29	469.1		468.6	470.9	472.7	477.3	472.0	468.1	466.1	467.3	465.6	467.0
30	470.0		468.5	471.1	472.7	477.4	471.9	468.1	466.1	467.3	465.4	467.2
31	470.2		468.6		472.5		471.9	468.0		467.2		467.4

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	467.5	467.6	469.7	471.1	470.7	474.1	477.2	472.4	470.3	468.0	468.7	466.0
2	467.5	467.6	469.8	471.4	470.7	474.7	476.9	472.6	469.9	468.1	468.6	466.0
3	467.6	467.5	470.6	471.4	470.7	475.3	476.7	472.6	469.7	468.1	468.5	466.0
4	467.6	467.4	471.0	471.6	470.3	475.7	476.6	472.5	469.4	468.3	468.5	466.0
5	467.6	467.4	471.4	471.8	470.2	475.5	476.7	472.0	469.2	468.5	468.5	466.0
6	467.7	467.5	471.1	471.7	470.2	475.2	476.8	471.7	469.1	468.5	468.6	466.1
7	467.6	467.4	469.2	471.4	470.1	475.1	476.9	471.6	469.0	468.4	468.6	466.3
8	467.8	467.4	469.0	471.4	470.2	475.2	476.9	471.7	468.9	468.3	468.5	466.4
9	467.8	467.4	468.8	471.1	470.6	475.0	477.1	472.0	468.9	468.1	468.6	466.6
10	467.8	467.4	470.9	471.1	470.9	474.7	477.3	471.9	468.7	468.1	468.6	466.7
11	467.7	467.4	470.1	470.8	471.5	474.5	477.4	471.7	468.6	468.0	468.5	466.8
12	467.6	467.5	470.2	470.8	471.8	474.4	477.2	471.9	468.5	468.0	468.5	467.1
13	467.6	467.5	470.4	471.5	472.6	474.1	477.1	471.9	468.4	467.8	468.4	467.1
14	467.7	467.6	470.6	472.0	472.8	474.1	476.8	471.9	468.3	467.8	468.3	467.1
15	467.7	467.6	471.3	472.0	473.6	474.5	476.3	472.1	468.3	467.7	468.0	467.1
16	467.6	467.7	470.9	473.2	474.2	475.0	475.9	472.1	468.2	467.7	467.8	467.1
17	467.6	467.8	470.9	473.8	474.4	475.6	475.4	472.3	468.2	467.9	467.2	467.2
18	467.7	468.0	471.3	474.5	475.1	476.1	474.8	472.8	468.1	467.3	467.3	465.6
19	467.6	468.0	471.4	475.6	475.0	476.0	474.5	473.1	468.1	468.5	466.9	465.3
20	467.7	468.1	470.8	474.7	474.0	476.3	474.3	472.6	468.1	468.3	467.1	465.5
21	467.8	468.2	470.4	473.5	473.2	477.1	474.0	472.2	468.1	468.3	467.6	465.6
22	467.8	468.4	469.0	472.6	473.3	477.5	473.7	471.9	468.1	468.3	467.9	465.4
23	467.9	468.4	469.3	472.0	473.3	477.6	473.6	471.7	468.2	468.3	467.8	465.9
24	467.9	468.5	468.5	471.8	475.8	478.1	473.6	471.5	468.3	468.4	467.8	466.1
25	467.9	468.5	468.5	471.6	477.1	478.1	473.4	471.4	468.5	468.4	467.7	465.3
26	467.9	468.6	468.6	471.7	476.8	477.8	473.2	471.2	468.5	468.4	467.5	465.0
27	467.9	468.7	468.7	471.6	475.8	477.8	473.2	471.0	468.4	468.7	467.3	465.2
28	467.9	469.1	469.1	471.1	475.3	478.0	472.9	470.8	468.3	468.9	467.0	465.3
29	467.8		.....	470.8	475.1	477.9	472.8	470.8	468.2	469.0	466.9	464.6
30	467.8		.....	470.8	474.8	477.6	472.6	470.7	468.0	469.0	466.5	465.0
31	467.6		.....		474.3		472.5	470.4		468.8		465.3

Missouri River.—Brownville, Neb., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	468.5	468.0	469.2	474.1	473.0	474.4	475.5	473.7	470.9	469.8	469.1	467.4
2	468.6	468.2	469.2	474.7	473.1	474.6	476.3	473.4	470.8	469.9	469.0	467.5
3	468.6	468.1	469.3	475.0	473.0	474.8	476.7	473.0	470.6	470.0	469.0	467.6
4	468.6	468.0	469.5	476.3	472.9	474.9	476.9	472.6	470.5	470.3	469.0	467.9
5	468.7	467.9	469.9	477.3	472.9	474.8	476.9	472.3	470.3	470.9	469.0	468.1
6	468.7	467.9	469.9	477.9	472.9	474.8	476.6	472.1	470.2	470.9	469.0	468.3
7	468.6	467.9	469.9	478.4	473.3	475.1	476.1	471.9	470.5	470.8	468.9	468.3
8	468.8	467.9	469.8	478.6	473.4	475.6	475.8	471.7	470.4	470.7	468.9	468.3
9	468.9	467.9	469.9	477.7	472.4	475.7	475.7	471.5	470.2	470.6	468.9	468.2
10	469.0	467.8	470.1	476.7	472.5	475.7	475.4	471.3	470.0	470.5	468.8	468.2
11	469.1	467.7	470.4	475.3	472.4	475.7	475.2	471.1	469.9	470.5	468.8	468.0
12	469.1	467.6	470.6	474.5	472.2	475.7	475.0	470.9	469.8	470.6	468.8	467.8
13	469.2	467.6	469.6	474.1	472.0	475.7	474.7	470.9	469.8	470.6	468.8	466.9
14	469.2	467.6	469.5	473.9	471.8	475.9	474.5	470.9	469.7	470.5	468.8	465.9
15	469.2	467.7	469.5	473.7	471.8	476.4	474.2	470.7	469.9	470.2	468.8	465.5
16	469.2	467.7	469.8	473.5	471.6	476.8	473.9	470.6	469.9	470.0	468.8	465.2
17	469.2	467.8	469.7	473.2	471.6	477.4	473.8	471.0	469.9	469.8	468.8	464.3
18	469.1	467.9	469.6	473.1	471.6	477.4	473.7	470.9	469.7	469.7	468.9	464.0
19	469.0	467.9	470.2	472.9	471.5	477.3	473.8	470.9	469.6	469.5	468.8	465.5
20	469.0	467.9	470.6	472.7	471.3	477.3	473.8	470.9	469.6	469.3	468.8	466.3
21	468.9	467.9	470.7	472.5	471.4	477.5	473.6	470.9	469.5	469.2	468.9	466.4
22	468.9	467.9	471.3	472.3	471.8	477.5	473.6	470.7	469.4	469.1	468.8	466.5
23	468.7	468.0	473.4	472.2	472.1	477.5	473.8	470.5	469.2	469.1	468.5	466.9
24	468.6	468.0	476.0	472.1	472.7	477.4	473.9	470.7	469.2	468.9	468.1	467.0
25	468.4	468.1	475.7	471.9	472.8	477.0	474.0	470.7	469.5	468.9	467.7	467.2
26	468.4	468.3	473.9	471.9	472.9	476.8	473.9	470.9	469.6	469.0	467.2	467.3
27	468.3	468.4	473.5	471.8	472.9	476.4	473.8	471.0	469.7	469.0	466.8	467.3
28	468.2	468.6	473.6	472.0	473.2	476.1	473.8	471.1	470.0	469.0	466.8	467.3
29	468.1	468.9	473.8	472.3	474.0	475.6	473.9	471.1	469.9	469.0	466.9	467.5
30	468.1		473.7	472.7	474.1	475.5	474.2	471.1	469.7	469.1	467.3	467.5
31	468.0		473.8	472.7	474.2	475.5	474.1	471.1	469.7	469.1	467.3	467.6

Missouri River.--Brownsville, Neb., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	467.80	468.00	469.63	471.10	471.58	472.43	475.35	473.20	470.15	468.85	468.80	468.60
2	467.95	468.07	470.02	471.02	471.20	472.23	475.35	472.90	470.18	468.77	468.80	468.62
3	468.20	468.17	470.30	470.98	470.93	472.12	475.27	472.80	470.20	468.70	468.65	468.65
4	468.30	468.45	470.70	470.93	470.95	472.40	475.23	472.67	470.10	468.67	468.50	468.50
5	468.30	468.75	471.05	471.15	471.00	472.80	475.55	472.57	470.05	468.65	468.45	468.73
6	468.52	469.15	471.50	471.25	471.02	472.70	475.55	472.55	469.98	468.57	468.50	468.30
7	468.52	469.42	472.07	471.15	470.75	472.85	475.45	472.70	469.87	468.47	468.50	467.60
8	468.45	469.65	472.40	471.25	470.63	472.82	475.45	472.70	469.85	468.45	468.50	466.02
9	468.37	469.70	472.60	471.03	470.47	473.40	475.37	472.68	469.85	468.42	468.50	466.75
10	468.27	469.60	473.33	470.87	470.33	474.95	475.10	472.80	469.85	468.35	468.85	468.30
11	468.17	469.60	472.95	471.30	470.20	475.15	474.90	472.68	469.90	468.40	469.07	467.50
12	468.10	469.70	472.10	471.30	470.20	475.13	474.88	472.58	470.00	468.47	469.03	468.05
13	468.00	469.80	471.83	471.75	470.15	475.27	474.93	472.35	470.15	468.65	468.95	468.28
14	468.00	469.87	471.65	472.23	470.10	475.65	474.80	472.10	470.12	468.70	468.80	468.37
15	468.00	469.83	472.32	472.02	470.15	476.32	474.72	471.77	470.08	468.70	468.80	468.97
16	468.07	469.70	471.80	471.75	470.25	476.98	474.65	471.52	470.12	468.70	468.80	468.75
17	468.17	469.47	471.70	471.20	470.82	477.22	474.40	471.38	470.18	468.75	468.95	468.83
18	468.20	469.40	471.95	470.55	471.15	477.07	474.10	471.30	470.05	468.75	468.95	468.82
19	468.20	469.25	471.35	469.77	471.22	476.57	473.85	471.18	469.88	468.67	468.93	468.75
20	468.20	469.13	470.85	469.50	471.33	476.35	473.63	471.03	469.73	468.55	468.85	468.70
21	468.17	468.90	470.65	469.70	471.13	476.20	473.53	470.92	469.65	468.47	468.75	468.70
22	468.10	468.90	470.40	469.82	471.85	476.10	473.67	470.85	469.65	468.43	468.70	468.83
23	468.05	468.93	470.35	470.17	472.12	475.85	473.63	470.83	469.65	468.45	468.77	469.00
24	468.97	468.95	471.40	470.50	471.97	475.77	473.92	470.92	469.45	468.43	468.75	469.60
25	467.90	468.95	471.55	470.85	471.77	475.75	473.90	470.97	469.33	468.43	468.75	469.87
26	467.90	468.98	471.12	470.90	471.60	475.63	473.77	470.75	469.23	468.40	468.75	470.30
27	467.95	468.97	471.20	471.00	471.67	475.53	473.85	470.63	469.15	468.40	468.75	468.60
28	467.80	469.13	471.22	471.25	471.95	475.35	473.75	470.45	469.05	468.60	468.72	468.70
29	467.82		470.00	471.37	471.87	475.22	473.47	470.30	468.98	468.77	468.70	468.75
30	467.85		471.07	471.65	471.87	475.25	473.50	470.22	468.88	468.80	468.60	468.90
31	467.95		471.02		472.25		473.50	470.15		468.80		468.82

Missouri River.—Nebraska City Neb., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1								502.8	500.1	.....	497.8	496.6
2								502.6	500.0	.....	497.8	496.6
3								502.4	499.8	.....	497.8	493.4
4								502.2	499.7	498.5	497.8	496.7
5								502.0	499.7	498.5	497.8	496.7
6								501.9	499.7	.....	497.8	496.7
7								501.9	499.7	498.4	497.8	496.7
8								501.8	499.6	.....	497.8	496.6
9								501.6	499.5	498.3	497.8	496.7
10								501.5	499.4	.....	497.8	496.7
11								501.5	499.4	.....	497.8	496.7
12								501.5	499.7	498.1	497.8	496.7
13								501.7	499.6	.....	497.9	494.9
14								501.8	499.6	498.1	498.0	497.4
15								501.7	499.5	498.0	498.0	495.9
16								501.6	499.2	498.1	498.1	495.7
17								501.6	499.1	498.0	498.1	495.4
18								501.6	499.5	498.0	498.1	495.5
19								501.4	499.5	497.9	498.0	496.0
20								501.1	499.2	497.9	497.9	496.0
21								500.9	499.1	497.9	497.9	496.4
22								500.7	499.0	497.9	497.9	496.6
23								500.6	498.9	497.9	497.9	496.8
24								500.6	499.1	497.8	497.9	497.1
25								500.6	499.0	497.9	497.8	497.1
26								500.5	499.0	497.8	497.8	497.3
27								500.5	.....	497.8	497.8	497.5
28								500.5	.....	497.8	497.8	497.5
29								500.4	.....	497.8	497.8	497.5
30								500.2	.....	497.8	497.7	497.4
31								500.1	.....	497.8	497.8	497.3

Missouri River.—Nebraska City, Neb., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	497.4	497.9	498.0	501.0	500.5	502.3	505.5	502.2	498.7	497.4	497.2	496.7
2	497.2	498.1	498.0	501.1	500.8	502.6	505.3	502.1	498.6	497.4	497.3	496.5
3	497.2	498.1	498.2	500.7	500.8	502.7	505.2	502.2	498.5	497.4	497.4	496.4
4	497.2	498.1	498.3	501.5	500.7	503.0	505.0	502.3	498.3	497.5	497.5	496.2
5	497.2	497.9	498.1	502.7	501.0	502.7	505.0	502.1	498.2	497.5	497.6	496.2
6	497.3	497.9	497.7	503.8	500.9	502.8	505.1	501.9	497.9	497.5	497.7	496.2
7	497.3	497.8	497.5	504.6	500.7	503.2	505.1	501.7	497.8	497.4	497.8	496.2
8	497.4	497.8	498.5	505.1	500.7	503.3	504.7	501.5	497.6	497.4	497.9	496.1
9	497.4	497.8	499.3	505.4	500.6	503.2	504.3	501.3	497.6	497.5	497.8	496.0
10	497.5	497.8	498.6	505.4	500.8	503.1	504.1	501.0	497.6	497.4	497.8	495.7
11	497.5	497.8	498.8	504.6	500.8	502.8	504.1	500.8	497.6	497.4	497.8	494.7
12	497.6	497.7	499.1	503.6	500.8	502.7	503.9	500.6	497.6	497.5	498.0	495.0
13	497.7	497.6	499.2	502.8	500.7	503.0	503.7	500.6	497.8	497.4	498.0	495.2
14	497.8	497.6	499.0	502.4	500.6	503.0	503.5	500.4	497.9	497.3	497.9	495.2
15	497.8	497.4	498.9	502.1	500.6	503.4	503.3	500.3	497.8	497.2	497.8	495.6
16	497.8	497.5	498.6	501.7	500.0	504.1	503.2	500.0	497.8	497.2	497.8	496.2
17	497.8	497.6	498.6	501.4	501.1	504.4	503.0	499.8	497.7	497.3	497.8	496.4
18	497.8	497.7	498.4	501.3	500.9	504.9	502.9	499.7	497.6	497.3	497.7	496.6
19	497.8	497.7	498.1	501.2	500.8	505.2	502.8	499.5	497.6	497.3	497.7	496.7
20	497.8	497.6	498.4	500.0	500.8	505.4	502.8	499.4	497.6	497.2	497.6	496.7
21	497.8	497.6	498.1	500.7	500.9	504.6	502.4	499.3	497.5	497.1	497.5	496.6
22	497.7	497.7	497.9	500.7	501.3	504.6	502.6	499.2	497.5	497.2	497.5	496.7
23	497.7	497.8	497.6	500.6	501.2	505.3	502.5	499.1	497.4	497.2	497.4	496.7
24	497.6	497.8	497.5	500.4	501.6	505.5	502.4	499.1	497.4	497.2	497.3	496.8
25	497.6	497.9	497.5	500.4	501.7	505.7	502.4	499.1	497.4	497.1	497.3	496.9
26	497.6	497.7	499.7	500.4	501.4	506.0	502.3	499.0	497.4	497.1	497.2	497.0
27	497.6	497.8	500.4	500.2	501.5	506.5	502.3	498.8	497.4	497.2	497.2	497.2
28	497.8	498.2	500.8	500.2	501.9	506.7	502.2	498.8	497.4	497.2	497.1	497.3
29	497.8		500.4	500.1	502.3	506.2	502.3	498.7	497.3	497.2	497.1	497.3
30	497.8		500.3	500.1	502.2	505.9	502.4	498.8	497.3	497.2	497.0	497.4
31	497.9		500.3		502.1		502.3	498.7		497.2		497.4

Missouri River.—Nebraska City, Neb., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	497.6	496.6	495.9	498.2	499.1	499.9	504.5	501.0	501.0	498.5	497.5	498.4
2	497.6	496.3	496.1	498.1	499.2	500.6	504.5	501.8	501.2	498.5	497.5	498.5
3	497.4	496.5	497.4	498.0	499.1	500.7	504.4	501.9	501.6	498.5	497.5	498.6
4	497.3	496.5	497.6	498.3	498.9	501.2	504.4	502.0	502.0	498.3	497.5	498.6
5	497.3	496.5	497.6	501.6	498.7	501.9	504.4	501.9	501.9	498.2	497.5	498.4
6	497.3	496.5	497.6	503.1	498.5	502.4	504.6	501.8	501.3	498.1	497.5	498.2
7	497.4	496.6	497.5	502.9	498.6	502.2	504.8	501.9	500.7	498.1	497.5	498.1
8	497.4	496.5	497.5	502.4	498.7	502.1	505.1	501.9	500.5	498.0	497.5	498.2
9	497.5	496.7	497.8	501.9	498.7	501.7	505.1	502.0	500.3	497.9	497.5	498.3
10	497.6	496.5	497.9	501.5	498.8	501.4	505.1	501.9	500.3	497.9	497.6	498.5
11	497.6	496.5	497.9	501.0	498.8	501.2	505.0	501.7	500.1	498.0	497.5	498.5
12	497.8	496.7	497.8	500.6	498.8	501.4	504.8	501.5	500.1	497.9	497.4	498.5
13	497.6	496.9	497.5	500.2	498.8	501.7	504.9	501.2	500.0	497.8	497.4	498.5
14	497.4	496.9	496.6	499.8	498.9	501.7	504.7	501.0	499.8	497.8	497.4	498.5
15	497.4	497.0	495.9	499.6	498.8	502.4	504.8	500.8	499.6	497.8	497.4	498.5
16	497.2	497.0	495.7	499.2	498.7	503.1	505.0	500.7	499.8	498.0	497.3	498.4
17	497.0	497.6	495.9	499.0	498.6	502.8	504.9	500.7	499.4	498.4	497.3	498.4
18	496.6	497.0	496.1	498.7	498.6	502.7	504.7	500.6	499.3	498.2	497.1	498.3
19	496.4	497.1	495.9	498.5	498.7	502.8	504.7	500.6	499.2	498.2	496.5	498.3
20	496.5	497.1	496.0	498.6	498.7	503.7	504.7	500.6	499.2	498.1	496.5	498.3
21	496.4	497.1	496.6	498.6	498.8	503.6	504.6	500.5	499.2	498.0	498.1	498.3
22	496.4	497.1	496.6	500.1	498.9	503.8	504.2	501.0	499.1	497.9	497.3	498.3
23	496.3	497.2	498.4	500.3	498.8	503.8	503.8	501.5	499.1	497.8	497.7	498.2
24	496.3	497.7	498.7	500.0	499.0	503.6	503.4	501.2	499.1	497.7	498.0	498.2
25	496.5	498.2	498.6	499.6	499.3	503.6	503.0	500.9	499.2	497.7	498.0	498.1
26	496.6	498.6	498.3	499.4	500.2	503.6	502.8	500.7	499.1	497.7	497.9	498.1
27	496.8	498.5	498.0	499.1	500.4	503.6	502.5	500.6	499.0	497.7	497.8	498.0
28	496.0	498.4	498.0	498.8	500.6	503.7	502.3	500.6	498.8	497.6	497.1	497.9
29	495.9	497.4	497.8	498.9	500.4	504.1	502.2	500.7	498.7	497.6	498.3	497.7
30	496.0		497.8	498.0	500.2	504.3	502.1	500.6	498.6	497.6	498.4	497.7
31	496.4		497.8		500.0		502.1	500.7		497.5		497.7

Missouri River.—Nebraska City, Neb., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	497.9	498.2	498.9	503.6	506.5	504.2	505.0	500.7	498.3	498.1	498.8	497.6
2	498.0	498.2	498.9	503.8	505.5	504.1	504.6	500.6	498.3	498.1	498.8	497.2
3	498.0	498.2	499.0	504.4	504.6	503.9	504.1	500.5	498.3	498.1	498.8	497.0
4	497.9	498.2	499.0	504.7	504.2	504.1	503.5	500.3	498.3	498.1	498.7	497.0
5	497.9	498.2	499.0	505.4	503.7	504.2	502.9	500.3	498.2	498.2	498.7	497.1
6	497.9	498.4	499.0	505.6	503.4	504.0	502.6	500.2	498.2	498.0	498.8	497.0
7	497.9	498.6	499.1	505.6	503.2	503.9	502.6	500.1	498.3	498.0	498.9	496.9
8	497.9	498.6	499.2	505.9	503.1	504.1	502.6	499.9	498.3	498.1	499.0	496.9
9	497.9	498.7	499.2	506.7	502.9	504.2	502.7	499.8	498.6	498.1	498.9	497.0
10	497.9	498.7	499.3	507.4	502.7	504.2	502.9	499.8	499.0	498.2	498.9	496.9
11	498.0	498.6	499.5	507.5	502.5	504.2	503.3	499.7	499.0	498.2	498.8	496.9
12	498.1	498.6	500.8	507.0	502.6	504.4	503.3	499.7	498.7	498.4	498.7	496.8
13	498.1	498.5	502.6	505.9	502.6	504.5	503.3	499.6	498.7	498.3	498.7	496.8
14	498.2	498.6	502.8	504.7	502.5	504.9	503.4	499.5	498.6	498.1	498.6	496.9
15	498.2	498.6	502.9	504.4	502.3	505.8	503.2	499.3	498.6	498.1	498.5	497.1
16	498.3	498.6	503.1	504.5	502.3	505.7	502.9	499.3	498.6	498.1	498.5	496.8
17	498.3	498.7	503.2	504.4	502.1	505.2	502.6	499.2	498.7	498.2	498.5	496.6
18	498.3	498.7	503.3	505.1	502.1	505.0	502.3	499.2	498.7	498.2	498.5	496.6
19	498.4	498.7	503.7	505.8	502.6	504.6	502.1	499.0	498.6	498.2	498.4	496.7
20	498.4	498.7	503.9	507.0	503.2	504.2	502.0	498.9	498.5	498.2	498.1	497.0
21	498.4	498.7	503.7	507.7	503.4	504.2	502.0	498.8	498.3	498.2	497.7	497.1
22	498.4	498.8	503.5	508.2	503.3	504.0	501.8	498.6	498.1	498.2	497.3	497.2
23	498.5	498.7	503.2	508.4	503.0	504.2	501.5	498.5	498.0	498.3	497.2	497.1
24	498.5	498.8	503.3	508.5	502.7	503.7	501.4	498.5	497.9	498.4	497.1	497.0
25	498.5	498.8	.....	508.8	502.4	503.3	501.3	498.4	497.9	498.4	497.1	496.8
26	498.4	498.9	.....	508.8	502.2	503.9	501.3	498.3	497.9	498.4	496.9	496.8
27	498.3	498.9	.....	509.1	502.2	504.7	501.3	498.3	497.9	498.4	497.0	496.7
28	498.3	498.9	505.8	509.0	502.3	504.5	501.0	498.3	497.9	498.5	497.3	496.8
29	498.3		504.5	508.5	503.0	504.7	500.9	498.3	497.9	498.6	497.7	496.8
30	498.2		503.9	507.6	503.7	505.2	501.0	498.3	498.0	498.6	497.8	496.8
31	498.2		504.5		504.2		500.8	498.2		498.7		496.7

Missouri River.—Nebraska City Neb., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	495.8	496.8	498.0	498.0	500.6	501.1	505.3	500.6	498.3	496.8	497.1	495.6
2	495.3	496.7	498.4	498.0	500.3	500.9	505.2	500.5	498.3	496.8	497.0	495.6
3	494.6	496.8	498.5	497.8	500.0	500.7	505.0	500.3	498.2	496.8	497.0	495.3
4	494.5	496.8	498.7	497.9	499.7	500.5	504.7	500.2	498.1	496.9	497.0	495.1
5	494.7	496.7	499.6	498.0	499.5	500.4	504.2	500.2	498.0	496.9	497.0	495.1
6	495.0	496.7	499.9	498.0	499.4	500.2	504.0	500.2	497.9	496.9	497.0	495.1
7	495.2	496.7	499.2	498.2	499.5	500.0	503.0	500.1	497.9	496.9	497.0	495.3
8	495.8	496.9	498.9	498.5	499.5	500.1	503.7	500.0	497.9	496.9	497.0	495.1
9	496.2	496.8	497.3	498.9	499.6	500.0	503.6	500.0	497.8	496.9	496.9	494.9
10	496.3	497.1	497.1	500.1	499.6	500.1	503.4	500.0	497.7	497.1	496.9	495.2
11	496.4	497.9	497.1	502.1	499.6	500.2	503.4	499.7	497.7	497.5	497.1	495.4
12	496.7	497.8	497.2	502.7	499.8	501.4	503.5	499.7	497.6	497.7	497.2	496.0
13	496.9	497.7	497.5	502.2	500.0	501.7	503.4	499.7	497.5	497.7	497.1	496.3
14	496.8	497.3	497.2	501.9	500.9	501.7	503.5	499.4	497.4	497.6	497.1	496.5
15	496.9	497.1	497.1	501.5	501.3	502.1	503.4	499.3	497.3	497.5	497.0	496.5
16	496.6	497.0	498.2	501.2	501.2	502.3	503.5	499.1	497.3	497.5	496.9	496.4
17	496.6	497.1	498.1	500.9	501.0	502.9	503.5	499.1	497.3	497.5	496.8	496.3
18	496.6	497.0	498.2	500.7	500.6	503.2	503.2	499.0	497.2	497.4	496.7	496.3
19	496.6	496.7	497.9	500.7	500.6	504.0	502.8	498.9	497.2	497.3	496.6	496.4
20	496.6	495.8	497.7	500.8	501.6	504.4	502.7	498.8	497.2	497.2	496.7	496.4
21	496.7	494.6	497.7	500.7	501.9	504.6	502.4	498.7	497.0	497.2	496.7	496.5
22	496.6	495.6	497.5	500.7	501.5	504.6	502.0	498.7	496.9	497.4	496.7	496.5
23	496.7	495.7	497.4	500.2	501.5	504.9	501.8	498.6	496.9	497.4	496.6	496.6
24	496.6	495.9	497.3	500.0	501.3	505.0	501.6	498.6	496.9	497.5	496.6	496.6
25	496.3	496.9	497.3	500.0	501.2	505.0	501.2	498.5	496.9	497.5	496.2	496.7
26	496.5	495.7	497.4	499.9	501.2	505.1	501.0	498.5	496.9	497.6	496.1	496.9
27	496.6	496.0	497.3	499.8	501.5	504.9	500.9	498.5	496.9	497.5	496.0	497.0
28	496.9	497.7	497.2	499.6	501.7	505.2	501.0	498.5	496.9	497.3	496.0	497.1
29	496.9		497.0	499.6	501.7	505.3	501.0	498.5	496.9	497.3	496.0	497.3
30	496.9		497.1	500.2	501.7	505.3	501.1	498.4	496.9	497.2	495.9	497.4
31	496.9		497.5		501.4		500.9	498.3		497.1		497.5

Missouri River.—Nebraska City Neb., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	*December.
1	497.5	497.1	499.1	500.1	500.1	503.2	506.2	501.1	499.1	497.6	498.1	495.7
2	497.6	496.9	499.5	500.3	500.1	503.8	505.9	501.2	499.1	497.6	498.0	495.8
3	497.5	496.9	500.0	500.4	500.0	504.0	505.7	501.2	499.0	497.7	498.0	495.8
4	497.4	496.8	500.3	500.4	499.8	504.1	505.7	501.1	498.9	497.6	498.1	495.8
5	497.4	496.8	500.0	500.5	499.7	503.8	505.9	500.7	498.8	497.8	498.1	495.8
6	497.3	496.8	499.5	500.6	499.7	503.7	505.9	500.4	498.7	497.7	497.9	496.0
7	497.2	496.8	499.5	500.4	499.7	503.4	505.9	500.1	498.5	497.6	497.9	496.1
8	497.1	496.7	499.3	500.5	499.8	503.7	506.2	500.3	498.5	497.6	497.8	496.2
9	497.0	496.8	499.7	500.4	500.0	503.4	506.3	500.4	498.4	497.5	497.7	496.3
10	497.0	496.7	500.2	500.3	500.2	503.2	506.4	500.2	498.3	497.5	497.7	496.3
11	496.9	496.8	497.9	500.2	500.6	503.1	506.5	500.0	498.2	497.4	497.7	496.3
12	496.9	496.8	499.0	500.2	500.9	502.9	506.4	500.4	498.1	497.4	497.7	496.4
13	496.8	496.9	499.3	500.5	501.3	502.6	506.0	500.2	498.1	497.4	497.6	496.4
14	496.9	497.0	499.5	500.8	501.3	502.6	505.9	500.3	498.0	497.3	497.6	496.4
15	496.9	497.0	499.9	500.5	502.1	502.9	505.5	500.4	498.0	497.3	497.4	496.5
16	496.9	497.1	499.9	501.7	502.5	503.1	505.1	500.5	498.0	497.2	497.1	496.6
17	497.0	497.1	499.8	502.1	502.9	503.6	504.4	500.7	497.9	497.4	496.8	496.5
18	497.0	497.1	500.0	502.8	503.3	503.7	503.9	501.4	497.8	497.8	496.7	496.5
19	496.9	497.2	500.2	503.3	503.4	503.8	503.7	501.4	497.7	497.7	496.6	496.8
20	496.9	497.4	499.8	502.5	503.2	503.5	503.3	500.9	497.7	497.7	496.7	496.9
21	497.0	497.4	499.1	500.9	503.0	504.6	502.9	500.6	497.6	497.7	496.8	496.4
22	497.1	497.4	498.8	500.6	502.9	504.8	502.6	500.4	497.7	497.8	496.9	496.9
23	497.2	497.5	498.7	500.5	502.8	505.4	502.4	500.2	497.8	497.8	497.0	497.1
24	497.2	497.6	498.9	500.4	504.7	505.6	502.4	500.0	497.9	497.9	497.1	496.8
25	497.2	497.6	500.1	500.5	505.8	505.4	502.1	499.8	497.9	498.1	496.9	497.0
26	497.2	497.8	501.3	500.5	505.8	505.7	501.9	499.8	497.8	498.2	496.9	497.2
27	497.2	498.1	501.2	500.4	505.0	506.2	501.9	499.6	497.7	498.2	496.7	497.7
28	497.2	498.5	500.7	500.2	504.6	506.7	501.7	499.6	497.7	498.3	496.5	497.0
29	497.2		500.4	500.1	504.2	506.7	501.4	499.5	497.6	498.2	496.4	497.3
30	497.2		500.2	500.1	504.9	506.5	501.4	499.3	497.6	498.1	496.3	497.7
31	497.1		500.0	500.1	503.5		501.2	499.2	497.6	498.1	497.8	497.8

Missouri River.—Nebraska City Neb., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	498.1	498.0	499.1	502.9	500.7	503.7	505.7	503.0	500.9	500.0	498.9	497.5
2	498.2	498.0	499.3	503.4	500.9	504.2	506.1	502.8	500.7	499.9	498.8	497.6
3	498.1	498.1	499.3	503.8	500.9	504.3	506.5	502.4	500.6	500.0	498.8	497.7
4	498.3	498.1	499.8	505.1	500.9	504.4	506.6	502.1	500.4	500.3	498.7	498.0
5	498.3	498.1	500.0	506.2	501.1	504.4	506.5	501.9	500.3	500.9	498.8	498.1
6	498.6	498.1	499.9	507.3	501.3	504.3	506.2	501.7	500.3	501.0	498.7	498.3
7	498.7	498.1	499.9	507.8	502.2	504.8	505.7	501.6	500.6	500.9	498.8	498.2
8	498.9	498.2	500.0	507.7	501.9	505.3	505.6	501.3	500.4	500.7	498.8	498.3
9	499.0	498.1	500.1	506.5	501.6	505.3	505.5	501.1	500.2	500.5	498.8	498.3
10	499.0	498.1	500.2	505.2	501.3	505.2	505.2	501.0	500.1	500.3	498.8	498.2
11	499.0	498.1	500.4	504.2	501.3	505.3	504.9	501.0	500.0	500.1	498.9	498.2
12	499.1	498.1	500.8	503.5	501.0	505.3	504.8	500.7	500.0	500.1	499.0	497.9
13	499.3	498.1	501.0	502.9	500.8	505.3	504.7	500.8	499.9	500.0	498.9	497.5
14	499.2	498.1	501.4	502.5	500.6	505.6	504.4	500.7	500.0	499.9	498.9	495.9
15	499.3	498.2	501.9	502.2	500.3	505.9	504.2	500.5	500.2	499.7	498.9	495.4
16	499.2	498.2	501.6	501.9	500.3	506.3	504.0	500.6	500.2	499.6	498.8	495.0
17	499.2	498.2	500.1	501.7	500.2	506.6	503.9	500.8	500.0	499.5	498.9	495.4
18	499.2	498.3	499.8	501.5	500.3	506.5	503.8	500.7	499.8	499.4	498.9	497.6
19	499.1	498.2	500.4	501.3	499.8	506.6	503.8	500.7	499.8	499.4	498.8	497.7
20	499.0	498.5	500.4	500.9	499.8	506.7	503.7	500.8	499.8	499.1	498.8	497.8
21	499.0	498.4	500.5	500.3	500.2	506.9	503.7	500.7	499.8	499.0	498.8	498.1
22	499.0	498.4	500.3	500.3	500.5	507.0	503.7	500.5	499.7	499.0	498.6	498.4
23	498.7	498.4	502.3	500.0	500.9	506.9	503.8	500.4	499.6	498.9	498.4	498.4
24	498.6	498.3	505.3	499.9	501.6	506.7	503.9	500.5	499.8	498.9	498.0	498.6
25	498.5	498.4	504.2	499.8	501.7	506.4	504.1	500.6	499.8	498.9	497.6	498.8
26	498.5	498.5	503.1	499.8	501.7	506.1	503.8	499.8	499.8	498.9	496.9	498.9
27	498.0	498.6	502.7	499.8	501.9	505.7	503.8	500.3	499.9	499.0	496.8	498.9
28	498.0	498.8	502.7	499.8	502.7	505.5	503.7	500.9	500.0	499.0	497.0	498.9
29	498.0	499.1	502.8	499.8	503.3	505.2	503.8	501.0	500.0	498.9	497.3	499.0
30	498.0		502.6	500.3	503.2	505.1	503.9	501.1	499.9	499.0	497.5	499.2
31	498.0		502.8		503.6		503.6	501.0		498.9		499.3

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	499.30	498.50	499.75	502.05	501.70	502.90	504.30	502.50	500.40	498.85	498.80	498.80
2	499.25	498.55	500.05	502.10	501.55	502.70	504.35	502.20	500.50	498.80	498.80	498.80
3	499.20	498.70	500.30	501.90	501.35	502.55	504.35	502.10	500.55	498.75	498.65	498.80
4	499.55	498.95	500.75	501.75	501.30	502.70	504.50	502.00	500.50	498.75	498.60	499.00
5	499.90	499.25	501.10	502.20	501.35	503.10	504.60	501.90	500.40	498.70	498.55	499.15
6	499.75	499.55	501.25	502.20	501.50	503.00	504.70	501.90	500.15	498.60	498.60	498.45
7	499.60	499.85	501.75	501.90	501.10	503.25	504.60	502.00	499.95	498.60	498.60	497.15
8	499.50	499.85	502.95	502.00	500.95	503.30	504.50	501.95	500.00	498.70	498.85	496.80
9	499.35	499.65	503.10	501.40	500.90	504.50	504.50	502.00	500.00	498.60	499.00	495.55
10	499.10	499.80	503.80	501.10	500.85	505.90	504.30	502.00	500.00	498.55	499.10	494.85
11	499.00	499.90	503.30	501.60	500.80	505.80	504.20	502.00	500.10	498.45	499.10	495.45
12	498.90	500.00	503.55	501.70	500.70	505.80	504.05	502.00	500.20	498.70	499.00	496.35
13	498.80	500.25	502.95	502.55	500.60	505.95	503.90	502.00	500.30	498.95	499.00	496.55
14	498.80	500.30	502.60	503.00	500.60	506.35	503.90	501.85	500.10	498.90	498.95	496.75
15	498.80	500.00	502.60	502.80	500.65	506.85	503.75	501.50	500.10	498.90	498.90	497.20
16	499.00	499.85	502.95	502.50	500.60	507.00	503.50	501.25	500.15	498.90	498.90	497.20
17	499.10	499.65	502.90	501.95	501.35	507.05	503.50	501.10	500.15	498.90	499.05	497.25
18	499.15	499.45	502.75	501.00	501.95	506.95	503.40	501.05	500.10	498.85	499.10	497.20
19	499.05	499.30	501.95	500.30	501.55	506.45	503.30	500.95	499.95	498.80	499.10	497.25
20	498.95	499.15	501.60	499.45	501.65	506.15	503.20	500.75	499.90	498.65	499.10	497.35
21	498.85	499.00	501.40	499.90	501.50	505.90	503.10	500.70	499.85	498.70	499.05	497.30
22	498.80	498.95	501.20	500.20	502.55	505.55	503.25	500.65	499.85	498.70	499.10	497.45
23	498.60	498.90	501.35	500.55	502.55	505.35	503.25	500.60	499.85	498.75	499.10	497.75
24	498.50	498.90	502.85	500.60	502.65	505.15	503.35	500.75	499.55	498.75	499.10	497.90
25	498.35	498.90	502.35	501.05	502.45	505.00	503.30	500.85	499.45	498.70	499.10	498.45
26	498.40	498.95	502.10	501.10	502.20	504.80	503.15	500.70	499.35	498.70	499.05	498.35
27	498.40	499.00	502.25	501.30	502.25	504.65	503.15	500.65	499.30	498.60	499.05	498.75
28	498.35	499.20	502.20	501.55	502.60	504.20	502.95	500.55	499.15	498.75	499.10	498.25
29	498.30		501.95	501.75	502.45	504.05	502.80	500.50	498.95	498.95	499.05	498.60
30	498.40		501.85	501.95	502.55	504.00	502.80	500.45	498.90	498.85	498.85	498.75
31	498.45		502.05	501.95	502.90		502.75	500.45		498.80		498.70

Missouri River.—Plattsmouth, Neb., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					535.1	540.9	543.6	.....	.....	531.8	530.8	529.5
2					536.5	540.5	544.2	538.7	.....	531.7	530.8	530.2
3					536.2	540.8	544.3	.....	.....	531.8	530.8	529.7
4					536.1	541.9	544.1	.....	.....	531.7	530.8	528.5
5					535.9	541.6	543.9	.....	.....	531.6	530.9	527.9
6					535.8	540.9	.....	.....	533.1	531.5	530.9	527.8
7					535.6	540.6	.....	.....	.....	531.5	530.9	528.2
8					535.5	541.4	.....	.....	.....	531.3	530.8	528.1
9					535.6	542.2	.....	535.5	.....	531.2	530.8	528.6
10					535.7	542.1	.....	.....	.....	531.2	530.8	528.9
11					535.6	542.0	.....	.....	.....	531.2	530.8	529.0
12					535.4	541.9	.....	.....	.....	531.1	530.7	529.2
13					535.0	541.7	.....	.....	532.7	531.1	530.7	529.2
14					534.9	541.6	.....	.....	.....	531.0	530.7	529.2
15					534.8	541.3	.....	.....	.....	530.9	530.7	529.2
16					535.0	541.6	.....	534.9	.....	531.1	530.7	529.1
17					534.9	541.9	.....	.....	.....	531.0	530.7	529.2
18					534.8	542.1	.....	.....	.....	531.0	530.6	529.2
19				536.2	535.9	542.2	.....	.....	.....	531.0	530.6	529.3
20				536.4	535.9	541.9	.....	.....	532.2	531.1	530.6	529.2
21				536.6	536.3	541.8	.....	.....	.....	531.1	531.2	529.4
22				536.5	536.1	542.1	.....	.....	.....	531.1	531.6	529.6
23				536.2	538.6	542.3	.....	533.9	.....	531.0	531.8	529.6
24				536.4	536.9	542.8	.....	.....	.....	531.0	531.8	529.7
25				536.2	537.4	542.9	.....	.....	.....	530.9	531.6	529.9
26				535.8	539.5	542.9	.....	.....	.....	530.9	531.5	529.9
27				535.4	538.9	543.2	.....	.....	531.9	530.9	531.4	530.1
28				535.1	538.8	543.3	.....	.....	.....	530.9	531.4	530.4
29				535.0	538.9	543.5	.....	.....	.....	530.9	530.7	530.5
30				534.9	539.5	543.8	.....	533.9	.....	530.9	529.9	530.9
31					540.3	.....	.....	.....	.....	530.8	.....	531.1

Missouri River.—Plattsmouth, Neb., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	530.7	531.5	532.1	531.9	532.8	532.6	537.4	532.4	531.2	530.2	530.1	527.6
2	530.7	531.6	532.2	531.6	532.7	532.8	537.2	532.4	531.2	530.2	530.2	527.6
3	530.8	531.6	532.5	531.6	532.6	536.2	537.4	532.2	531.2	530.2	530.2	528.1
4	530.9	531.6	532.8	531.4	532.3	537.1	537.8	532.2	531.1	530.1	530.3	528.3
5	533.3	531.6	532.8	531.4	532.1	538.2	537.9	532.2	531.8	529.8	530.3	528.3
6	533.1	531.6	533.2	531.2	531.9	539.4	538.2	532.2	530.7	529.9	530.2	528.4
7	532.8	531.6	533.0	531.2	532.1	539.6	538.8	532.1	530.6	529.8	530.2	529.1
8	532.6	531.8	532.9	531.2	532.9	539.6	537.9	532.1	530.6	529.8	530.6	529.6
9	532.6	531.8	532.8	531.2	533.1	538.9	537.2	532.1	530.7	529.8	530.1	529.6
10	532.4	531.8	532.8	531.2	532.7	538.6	536.5	531.8	530.8	529.8	530.1	529.5
11	532.1	531.9	532.8	531.1	532.2	538.6	536.0	531.9	530.9	529.8	530.1	529.2
12	531.9	531.8	532.8	531.1	532.0	539.4	535.6	531.0	531.1	529.7	529.9	529.2
13	531.8	531.8	532.8	531.1	531.8	539.4	535.4	531.9	531.4	529.7	529.9	529.1
14	531.6	531.8	532.9	531.1	531.9	539.7	535.0	531.9	531.5	529.7	529.8	528.8
15	531.5	531.8	532.9	531.1	531.8	540.0	534.6	531.7	531.5	529.8	529.8	528.4
16	531.6	531.8	533.5	531.1	531.9	540.0	534.6	531.6	531.2	529.8	529.8	528.3
17	531.6	531.8	533.6	531.0	532.1	540.0	534.6	531.5	531.1	529.8	529.7	528.2
18	531.7	531.9	535.6	531.0	532.6	539.9	534.7	531.4	530.8	529.8	529.9	527.5
19	531.8	531.9	533.2	531.0	532.5	539.5	534.6	531.2	530.7	529.8	529.9	527.1
20	531.8	531.9	534.6	531.5	532.5	538.6	534.6	531.2	530.6	529.8	529.1	527.4
21	531.8	531.8	535.6	532.6	533.1	538.4	534.8	531.2	531.6	529.8	528.9	527.5
22	531.8	531.8	535.4	534.8	535.1	538.2	534.9	531.2	531.6	529.9	528.4	527.6
23	531.7	531.9	535.4	534.8	534.9	538.1	534.8	532.2	531.6	529.9	527.9	527.6
24	531.7	531.9	534.6	534.4	534.7	537.6	534.8	533.6	531.6	529.9	527.6	527.8
25	531.7	531.9	534.1	533.7	534.4	537.6	534.4	533.6	531.6	529.9	527.1	527.9
26	531.8	531.8	533.6	533.4	534.1	537.5	534.1	533.1	531.7	530.1	527.2	528.2
27	531.1	531.8	533.2	533.2	533.6	537.4	533.9	532.6	531.7	530.1	527.4	528.4
28	531.9	531.8	532.6	533.1	533.5	537.2	532.6	532.2	531.7	530.1	527.6	528.5
29	531.9		532.4	533.0	533.2	537.2	532.6	532.1	531.6	530.1	527.6	529.1
30	531.8		532.2	532.9	532.9	537.6	532.5	531.7	531.4	530.1	527.3	531.9
31	531.6		531.9		532.7		532.5	531.5		530.1		531.5

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Missouri River.—Plattsmouth, Neb., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	531.6	529.9	529.6	533.1	539.6	537.5	538.8	534.8	533.7	531.8	530.3	527.4
2	531.6	529.9	529.6	532.4	539.1	537.9	538.8	534.7	533.7	531.9	530.4	527.8
3	531.5	529.9	529.5	532.8	538.6	537.8	539.1	534.7	533.8	531.9	530.4	528.4
4	530.9	529.7	529.8	533.4	537.8	537.8	538.6	534.6	535.2	531.7	530.4	528.6
5	530.8	529.7	530.2	534.6	537.6	537.9	538.1	534.1	536.2	531.6	530.2	528.7
6	530.8	529.7	530.3	534.4	539.3	538.1	538.0	533.9	535.8	531.6	530.2	529.2
7	530.8	529.7	530.3	535.1	536.8	538.1	537.6	533.6	535.6	531.3	530.2	529.1
8	530.8	529.7	530.4	535.2	536.4	537.8	537.4	533.6	535.4	531.4	530.3	528.8
9	530.8	529.7	530.4	536.4	536.0	537.6	537.4	533.5	535.1	531.4	530.3	528.7
10	530.9	529.7	530.6	535.8	535.9	537.1	537.1	533.5	534.8	531.3	530.3	529.1
11	530.9	529.6	530.8	535.7	535.6	536.8	537.2	533.5	534.6	531.2	530.4	529.2
12	530.9	529.6	530.8	535.9	535.6	536.7	537.4	533.6	534.4	531.2	530.4	529.5
13	530.9	529.6	531.2	535.6	535.5	536.5	537.2	533.5	534.2	531.1	530.4	529.6
14	531.1	529.6	532.6	535.2	535.6	536.2	536.8	533.4	534.4	530.9	530.4	529.6
15	531.1	529.6	532.1	536.7	535.5	535.8	536.6	533.1	534.4	530.9	530.4	529.6
16	531.1	529.6	531.2	536.8	535.4	535.4	536.4	532.7	534.5	530.8	530.2	529.5
17	531.1	529.5	530.9	535.8	535.4	535.2	536.4	532.7	534.5	530.7	529.9	529.1
18	531.1	529.5	531.1	535.4	535.4	535.8	536.2	532.6	534.3	530.6	529.8	529.2
19	530.9	529.5	531.1	535.1	535.2	535.9	535.6	532.5	534.1	530.6	529.9	529.4
20	530.8	529.5	531.4	535.4	534.9	538.5	535.4	532.4	533.9	530.3	529.2	529.1
21	530.7	529.6	531.6	535.6	535.2	538.7	535.1	532.2	533.6	530.3	528.2	529.4
22	530.6	529.7	531.7	537.1	535.3	538.6	534.8	532.2	533.4	530.5	527.1	529.7
23	530.6	529.8	531.9	538.1	535.2	539.1	535.1	532.1	533.2	530.4	527.2	529.8
24	530.6	530.1	532.2	539.1	535.1	539.7	535.2	531.9	533.1	530.4	527.1	530.1
25	530.5	530.1	533.5	539.9	535.1	539.8	535.2	531.8	532.9	530.2	527.5	530.2
26	530.5	530.1	532.1	540.5	535.1	540.3	535.1	531.8	532.6	530.2	527.4	530.1
27	530.3	529.9	532.1	540.8	535.2	540.8	535.1	533.6	532.4	530.4	527.8	529.8
28	530.1	529.7	532.1	541.1	535.6	541.1	535.1	533.7	532.3	530.4	527.5	529.8
29	530.1		531.9	540.6	535.2	540.6	535.1	533.7	532.1	530.4	527.3	529.9
30	529.9		534.7	539.8	535.3	540.4	534.8	533.9	532.0	530.4	527.5	530.1
31	529.9		533.4		536.4		534.9	533.7		530.4		530.0

Missouri River.—Plattsmouth, Neb., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	529.7	527.6	528.2	533.6	532.6	535.5	539.4	533.9	532.8	532.7	531.2	528.6
2	530.1	527.7	527.6	532.8	532.4	536.1	539.6	533.8	532.8	532.6	531.2	528.1
3	530.2	528.1	527.8	532.5	532.6	536.9	539.6	533.6	533.2	532.4	531.1	529.5
4	529.5	528.4	528.6	532.6	532.6	536.6	539.8	533.6	533.6	532.3	531.1	530.6
5	529.9	529.1	529.6	533.4	532.9	537.1	539.6	533.5	534.1	532.1	530.9	530.9
6	529.8	528.9	531.1	533.2	533.1	537.8	538.7	533.6	533.8	532.1	530.9	531.4
7	529.8	528.9	531.8	533.1	533.1	538.1	538.4	533.6	534.2	532.1	530.9	531.4
8	529.6	528.9	530.5	532.6	533.2	538.1	538.4	533.8	534.2	532.1	530.8	531.2
9	528.8	528.7	529.8	533.2	533.6	538.4	538.1	534.2	534.4	531.9	530.8	530.5
10	528.1	528.7	530.7	533.1	533.2	539.1	537.8	534.2	534.2	531.7	530.7	530.5
11	528.4	528.7	530.4	532.9	533.2	539.1	537.6	533.8	533.8	531.6	530.6	530.6
12	528.8	528.8	530.1	532.6	532.8	539.4	537.5	533.6	533.8	531.4	530.6	531.1
13	529.3	529.1	529.7	536.2	532.7	539.1	536.7	533.4	534.1	531.1	530.6	530.8
14	529.4	529.3	530.6	536.5	532.6	538.8	536.7	533.4	533.8	530.8	530.4	530.6
15	529.7	529.3	532.3	538.4	532.6	538.7	536.6	533.2	533.7	530.8	530.4	530.6
16	529.8	529.2	531.8	537.9	532.5	538.4	536.5	532.8	533.4	531.1	530.4	530.6
17	530.1	529.5	531.5	537.4	532.3	538.1	536.4	532.1	533.2	531.1	530.4	530.5
18	529.7	529.7	531.2	536.4	532.4	538.7	536.4	533.1	533.4	530.8	530.2	530.4
19	529.8	529.6	530.8	535.8	532.4	539.4	535.8	533.6	533.2	530.8	530.1	530.4
20	529.8	530.1	530.4	535.4	532.4	539.7	535.8	533.5	533.4	530.8	529.7	530.7
21	529.7	530.1	530.1	535.1	532.5	539.8	536.1	533.2	533.4	530.8	529.5	530.6
22	529.6	529.3	529.6	534.8	532.3	539.6	535.6	533.2	533.6	530.9	528.9	530.6
23	529.6	529.3	529.7	534.6	532.2	538.6	535.4	533.1	534.1	531.2	528.8	530.8
24	529.8	528.7	529.6	534.4	532.6	537.8	535.4	532.8	533.9	531.3	528.8	530.7
25	529.9	529.3	530.1	534.2	533.2	538.2	535.4	532.5	533.6	531.4	528.7	530.9
26	529.9	529.2	529.1	533.8	533.1	538.8	535.4	532.4	533.2	531.4	528.9	531.4
27	529.8	529.2	532.6	533.6	534.7	538.9	535.2	532.2	532.9	531.3	529.5	531.5
28	529.4	528.6	532.1	533.2	535.1	539.2	534.8	532.1	532.8	531.2	529.8	531.6
29	529.1	527.9	531.9	532.9	534.9	539.4	534.5	532.1	532.8	531.2	529.8	531.6
30	528.6		532.8	532.6	535.4	539.1	534.4	532.4	532.8	531.2	529.8	531.6
31	528.4		532.3	532.6	535.1		534.2	532.8	532.8	531.2	529.8	531.6

Missouri River.—Plattsmouth, Neb., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	531.6	530.9	531.4	533.8	534.2	538.1	540.5	534.9	531.7	530.9	531.1	528.1
2	531.4	531.1	531.5	533.6	534.2	538.4	540.5	535.1	531.7	530.8	531.1	527.9
3	531.1	531.6	531.5	533.9	534.1	538.2	540.6	535.1	531.6	530.8	531.2	528.2
4	530.9	531.8	531.5	534.1	533.8	538.2	540.1	535.1	531.6	530.6	531.2	528.2
5	530.8	532.1	531.4	536.4	533.6	537.8	539.5	535.1	531.6	530.6	531.2	528.2
6	530.8	532.9	531.3	538.1	533.8	537.8	538.9	535.2	531.6	530.7	531.2	528.2
7	531.1	533.2	529.8	539.1	533.9	539.1	538.8	535.3	531.6	530.8	531.1	528.1
8	531.1	533.7	529.1	538.8	533.9	540.8	539.6	535.2	531.6	530.8	531.1	528.6
9	531.1	533.7	527.2	537.2	533.9	540.9	539.5	534.6	531.6	530.8	530.9	528.5
10	531.1	533.7	527.5	536.3	533.9	541.2	538.8	534.1	531.5	530.8	530.8	528.5
11	531.1	534.6	527.6	535.7	533.8	541.3	538.1	533.8	531.5	530.8	530.8	528.4
12	531.1	534.4	528.6	535.6	533.6	541.3	537.5	533.7	531.5	530.8	530.7	528.3
13	531.1	534.1	529.1	535.6	533.8	541.7	536.9	533.6	531.5	530.7	530.7	528.5
14	531.2	534.2	532.6	535.6	533.7	541.4	536.7	533.3	531.5	530.7	531.1	528.6
15	531.2	533.8	531.6	535.4	533.6	540.8	537.2	533.3	531.5	530.8	531.1	528.6
16	531.2	533.8	534.8	535.3	533.9	540.1	537.8	533.5	531.4	531.1	531.1	528.7
17	531.2	533.9	533.6	535.2	534.5	539.4	538.1	533.2	531.3	531.1	531.1	528.9
18	531.1	532.9	532.8	534.9	535.9	538.8	537.9	533.1	531.2	531.2	531.1	529.2
19	530.8	531.8	532.6	534.6	536.6	538.6	537.8	532.9	531.2	531.2	530.8	529.6
20	530.7	531.8	532.4	534.4	536.5	538.1	537.8	532.8	531.2	531.8	530.8	529.9
21	530.6	532.1	532.2	535.2	536.3	538.1	537.8	532.6	531.1	531.2	530.8	530.6
22	530.6	533.1	532.6	535.6	535.9	537.7	537.8	532.6	530.9	531.1	530.8	530.2
23	530.6	532.6	532.8	535.7	535.9	537.6	537.5	532.5	530.9	530.9	530.7	530.2
24	530.6	532.2	532.9	535.6	535.9	538.3	537.1	532.5	530.8	531.2	530.7	530.6
25	530.5	532.1	533.1	535.3	535.9	538.9	536.6	532.4	530.7	531.2	530.7	531.2
26	530.5	531.8	533.2	534.9	535.7	539.3	536.3	532.4	530.6	531.1	530.7	531.6
27	530.5	531.7	533.2	534.6	538.1	539.6	536.1	532.4	530.6	530.8	530.6	531.3
28	530.5	531.4	533.3	534.5	539.2	539.8	535.6	532.2	530.8	530.7	530.6	531.1
29	530.5		533.4	535.2	539.6	540.3	535.5	531.9	530.8	530.7	530.1	530.8
30	530.5		534.1	534.9	539.5	540.4	535.2	531.9	530.9	530.8	527.8	530.6
31	530.8		534.3		539.1		535.2	531.8		530.9		530.8

Missouri River.—Plattsmouth, Neb., 1878.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	530.6	529.9	530.8	533.2	537.6	539.2	541.1	536.3	532.5	531.7	531.1	531.1
2	530.6	529.6	530.8	532.8	537.4	539.6	541.1	535.8	532.5	531.6	531.2	531.1
3	528.6	529.6	530.8	532.6	537.0	538.8	540.8	535.6	532.3	531.6	531.2	531.1
4	527.5	529.6	530.8	533.1	536.9	539.6	540.2	535.8	532.3	531.5	531.2	531.1
5	527.5	529.6	530.9	533.2	536.6	540.6	539.7	535.6	532.3	531.4	531.2	531.1
6	527.6	529.6	531.1	533.2	536.2	541.1	539.2	535.3	532.3	531.4	531.2	531.1
7	527.7	529.9	531.1	533.1	535.8	541.4	539.1	535.3	532.4	531.4	531.2	531.1
8	527.1	530.2	530.8	532.8	535.3	541.6	539.1	535.3	532.6	531.3	531.2	531.1
9	527.2	530.3	531.1	533.1	535.1	541.6	538.8	535.2	532.8	531.3	531.2	531.1
10	527.4	530.2	531.1	533.4	534.9	541.4	539.4	535.2	533.0	531.3	531.2	531.0
11	527.6	530.2	531.2	533.3	534.8	541.2	539.8	534.8	532.8	531.3	531.2	530.7
12	527.1	529.7	531.2	533.5	534.6	540.8	539.2	534.6	532.6	531.3	531.2	530.6
13	528.8	529.8	531.2	533.4	534.4	540.2	538.3	534.4	532.6	531.4	531.4	530.6
14	529.1	529.8	531.4	532.9	534.1	539.6	537.8	534.3	532.6	531.4	531.5	.....
15	529.4	530.1	531.2	532.6	533.9	539.4	537.4	534.1	532.5	531.3	531.6	.....
16	529.8	530.1	531.2	532.5	533.9	538.8	537.3	533.9	532.3	531.2	531.6	.....
17	530.1	530.2	531.2	532.5	534.1	539.1	537.6	533.6	532.2	531.1	531.6	.....
18	530.2	530.2	531.2	532.6	534.1	538.9	537.6	533.6	531.9	531.1	531.5	.....
19	530.2	530.6	531.2	532.8	534.2	539.6	537.6	533.3	531.8	531.1	531.5	.....
20	530.2	531.6	531.1	532.9	534.3	540.1	537.1	533.6	531.7	531.1	531.4	.....
21	530.3	531.3	531.1	533.1	534.5	540.5	536.8	533.5	531.6	531.1	531.3	.....
22	530.4	531.1	531.1	533.4	534.4	541.1	536.6	533.3	531.6	531.2	531.3	.....
23	530.6	530.8	531.1	533.8	535.5	541.6	536.3	533.2	531.8	531.1	531.3	.....
24	530.6	531.6	530.9	534.2	537.8	541.6	536.3	533.1	532.1	531.1	531.3	.....
25	530.4	531.8	530.8	535.7	538.6	541.9	536.8	533.1	532.1	531.1	531.3	.....
26	530.4	531.2	531.1	536.2	539.1	541.9	538.1	532.8	531.8	531.1	531.3	.....
27	530.5	530.8	531.2	537.9	540.1	541.7	538.1	532.7	532.1	531.1	531.2	.....
28	530.2	530.7	533.2	538.1	540.2	541.1	536.3	532.6	531.7	531.1	531.2	.....
29	530.1		533.9	538.1	540.5	540.9	536.8	532.6	531.7	531.1	531.2	.....
30	530.1		533.8	537.6	540.1	540.8	536.8	532.6	531.7	531.1	530.8	.....
31	530.1		533.6		539.7		536.8	532.6		531.1		.....

Missouri River.—Plattsmouth, Neb., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1			531.9	534.4	534.6	536.3	539.6	536.7	531.6	530.3	530.5	529.1
2			531.9	533.8	534.7	536.8	539.5	536.5	531.4	530.3	530.4	528.6
3			532.1	533.6	534.5	537.1	539.5	536.1	531.2	530.3	530.6	528.4
4			532.1	535.1	534.5	536.8	539.6	535.6	531.2	530.6	530.6	528.4
5			532.1	536.8	534.6	536.6	539.7	535.2	531.1	530.5	530.8	528.5
6			532.1	538.2	534.5	536.9	539.2	534.8	531.1	530.6	530.9	528.3
7			532.8	538.6	534.4	537.3	538.8	534.4	531.1	530.6	531.1	528.3
8			532.2	538.9	534.4	537.1	538.6	534.2	531.2	530.6	531.2	528.5
9			532.6	539.8	534.4	536.9	538.6	534.1	531.2	530.6	531.1	528.2
10			531.8	539.2	534.6	536.4	538.5	533.9	531.2	530.6	530.8	529.6
11			532.4	537.8	534.5	536.2	538.5	533.7	530.9	530.6	531.1	528.6
12			532.8	536.8	534.6	535.8	538.1	533.6	530.9	530.7	531.2	528.2
13			532.4	536.2	534.4	536.2	537.6	533.5	530.8	530.7	531.1	.....
14			532.6	535.7	534.2	536.2	537.2	533.2	530.9	530.6	531.1	.....
15			532.3	535.2	534.2	537.1	538.2	533.2	530.6	530.4	531.1	.....
16			531.9	534.7	534.9	537.8	536.9	533.2	530.6	530.4	530.7	.....
17			531.6	534.7	534.6	538.6	536.8	533.1	530.6	530.4	530.7	.....
18			531.2	534.6	534.4	539.1	536.8	532.8	530.6	530.3	530.6	.....
19			530.6	534.5	534.3	538.6	536.5	532.6	530.6	530.3	530.5	.....
20			530.8	534.5	534.3	538.2	536.5	532.6	530.6	530.2	530.6	.....
21			530.7	534.4	534.6	537.8	536.4	532.4	530.5	530.2	530.5	.....
22			530.5	534.2	534.8	538.7	536.3	532.3	530.3	530.2	530.9	.....
23			530.4	534.2	535.1	539.6	536.1	532.2	530.2	530.2	530.9	.....
24		530.9	530.6	534.1	535.3	539.7	536.3	532.1	530.3	530.2	530.3	.....
25			531.4	534.1	535.2	539.8	535.8	532.1	530.2	530.2	530.4	.....
26			532.6	534.1	535.1	539.8	535.8	532.1	530.2	530.2	530.2	.....
27			533.8	534.1	535.2	540.2	535.4	532.1	530.2	530.2	530.2	.....
28			534.2	533.9	536.1	540.2	536.1	531.8	530.2	530.3	529.9	.....
29			533.8	533.8	536.5	539.8	536.2	531.8	530.2	530.3	529.9	.....
30			533.6	533.8	536.2	539.6	536.1	531.8	530.4	530.3	529.7	.....
31			533.4	533.8	536.2	536.2	536.2	531.7	530.2	530.3	529.7	.....

Missouri River.—Plattsmouth, Neb., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	.....	.....	529.5	531.6	532.4	533.4	539.8	536.2	534.6	531.1	530.6	.....
2	.....	.....	532.8	531.3	532.6	534.3	539.8	536.2	534.7	531.1	530.6	.....
3	.....	.....	531.3	531.2	532.3	534.3	539.8	536.2	535.5	531.1	530.7	.....
4	.....	.....	530.4	532.2	532.2	535.6	539.8	536.1	535.5	531.1	530.7	.....
5	.....	.....	529.9	537.3	532.1	536.3	539.9	535.9	534.8	531.1	530.7	.....
6	.....	.....	529.8	537.8	531.9	536.3	540.2	535.9	534.2	531.1	530.7	.....
7	.....	.....	529.8	537.6	532.1	535.7	540.2	535.8	533.8	531.1	530.6	.....
8	.....	.....	529.9	537.3	532.1	535.7	540.9	535.8	533.6	531.1	530.6	.....
9	.....	.....	530.5	536.6	532.1	535.1	540.7	535.7	533.5	531.2	530.6	.....
10	.....	.....	530.6	535.2	532.1	534.8	540.6	535.6	533.3	531.2	530.7	.....
11	.....	.....	530.6	534.6	532.1	534.7	540.5	535.2	533.3	531.2	530.6	.....
12	.....	.....	530.6	533.9	531.8	534.7	540.2	534.8	533.2	531.2	530.8	.....
13	.....	.....	530.6	533.5	531.8	535.4	540.8	534.4	533.1	531.1	530.7	.....
14	.....	.....	526.7	533.2	531.8	535.2	540.3	534.4	532.8	531.1	530.8	.....
15	.....	.....	526.6	532.8	531.8	536.2	540.1	533.9	532.6	531.2	530.8	.....
16	.....	531.2	527.2	532.5	531.9	536.8	539.8	534.2	532.4	531.2	530.7	.....
17	.....	530.7	527.3	532.2	531.7	537.2	539.6	534.1	532.2	531.5	530.2	.....
18	.....	529.9	527.6	531.8	531.8	537.2	539.4	534.1	532.1	531.5	529.6	.....
19	530.8	530.1	528.2	532.1	531.8	537.3	539.3	534.1	532.1	531.6	528.8	.....
20	530.8	530.1	528.4	531.8	531.7	538.7	539.6	534.1	531.9	531.4	528.7	.....
21	530.6	530.2	531.2	532.4	532.1	539.1	539.6	534.2	531.9	531.4	528.8	.....
22	530.6	529.7	532.6	533.7	531.8	538.7	538.7	534.5	531.8	531.2	530.2	.....
23	530.5	529.9	532.4	533.8	531.9	538.5	538.1	534.8	531.6	531.1	530.6	.....
24	529.4	531.2	531.9	533.4	532.3	538.2	537.3	534.3	531.8	531.1	.....	.....
25	529.4	532.2	531.3	533.0	532.7	538.1	537.1	534.2	531.7	530.9	.....	.....
26	529.4	532.2	531.2	532.6	533.4	538.4	536.6	534.2	531.7	530.9	.....	.....
27	529.6	531.7	531.3	532.2	533.6	538.4	536.5	534.2	531.5	530.8	.....	.....
28	532.4	531.8	530.8	532.2	533.7	538.8	536.3	534.6	531.4	530.7	.....	.....
29	.....	529.8	530.7	532.2	533.7	539.1	536.2	534.3	531.2	530.6	.....	.....
30	.....	.....	531.3	532.3	533.3	539.5	536.3	534.2	531.2	530.6	.....	.....
31	.....	.....	531.3	532.3	533.2	.....	536.4	534.2	.....	530.7	.....	.....

Missouri River.—Plattsmouth, Neb., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1				537.7	541.1	539.7	539.3	535.1	532.4	532.3	534.3	531.3
2				537.8	539.9	539.5	538.6	534.9	532.4	532.3	534.0	531.0
3				539.8	539.4	539.2	538.0	534.7	532.3	532.1	533.7	530.9
4				540.4	538.4	539.1	537.4	534.6	532.3	532.4	533.3	531.1
5				540.8	537.7	538.7	536.9	534.6	532.3	532.3	533.2	531.2
6				541.2	537.4	538.3	536.8	534.4	532.3	532.3	533.4	531.1
7				541.9	537.2	538.4	537.1	534.1	532.3	532.3	533.4	531.0
8				542.1	537.3	538.7	537.0	534.0	532.5	532.4	533.4	531.3
9				544.2	537.1	538.7	537.2	533.9	533.2	532.4	533.2	531.3
10			531.9	544.7	536.9	538.7	537.8	533.9	533.4	532.3	533.1	531.2
11			533.0	543.9	536.7	538.7	538.1	533.9	533.0	532.4	533.1	531.2
12			534.6	542.4	536.9	538.9	538.0	533.9	532.8	532.6	533.0	531.2
13			536.8	540.3	537.0	539.2	538.1	533.8	532.9	532.5	532.9	531.3
14			536.8	539.6	536.9	540.3	538.0	533.7	532.8	532.3	532.8	531.3
15			537.2	539.3	536.8	540.8	537.8	533.6	532.9	532.2	532.9	531.3
16			537.7	539.3	536.6	540.7	537.4	533.5	532.9	532.2	532.8	531.2
17			537.6	539.5	536.3	539.9	537.0	533.4	533.0	532.4	532.7	531.1
18			537.8	540.9	536.6	539.3	536.8	533.1	532.9	532.3	532.2	531.2
19			538.1	542.6	537.2	538.7	536.5	533.0	532.9	532.3	531.8	531.4
20			538.2	543.7	538.1	538.9	536.5	532.9	532.7	532.3	531.6	531.6
21			537.8	544.9	538.1	538.4	536.5	532.8	532.4	532.4	531.1	531.6
22			537.3	545.8	537.5	538.2	535.9	532.8	532.1	532.4	530.7	531.6
23			537.3	546.4	537.2	538.3	535.6	532.7	531.9	532.5	530.8	531.4
24			538.2	546.8	537.0	537.8	535.5	532.6	531.8	532.6	530.4	531.3
25			538.8	547.1	536.8	537.8	535.7	532.5	531.8	532.7	530.3	531.2
26			538.7	546.9	536.5	538.7	535.8	532.4	531.8	532.7	530.4	431.2
27			540.2	546.7	536.5	539.2	535.6	532.3	531.9	532.9	530.8	531.2
28			540.9	545.9	537.0	539.1	535.3	532.3	531.8	533.0	531.3	531.2
29			539.7	544.8	538.0	539.6	535.4	532.3	531.9	533.2	531.4	531.2
30			539.5	542.8	539.0	539.8	535.4	532.3	532.1	533.4	531.6	530.8
31			539.9		539.8		535.3	532.3		533.8		530.4

Missouri River.—Plattsmouth, Neb., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	529.3	532.7	532.4	532.2	534.9	535.1	540.7	534.8	532.1	530.8	531.4	529.4
2	528.3	532.7	532.6	532.1	534.5	534.9	540.4	534.7	532.0	530.8	531.4	529.3
3	528.2	532.5	532.7	531.9	534.3	534.9	540.2	534.5	531.9	530.8	531.3	528.8
4	528.4	532.7	533.0	532.1	534.0	534.5	539.6	534.3	531.9	530.8	531.2	528.7
5	528.6	532.6	533.6	532.2	533.8	534.4	539.1	534.3	531.8	530.9	531.3	528.9
6	529.0	532.8	533.5	532.3	533.6	534.3	538.9	534.3	531.7	530.8	531.3	528.8
7	529.4	532.8	532.6	532.4	533.7	534.2	538.7	534.2	531.7	530.8	531.4	528.2
8	529.6	532.9	531.5	533.0	533.7	534.2	538.6	534.2	531.6	530.8	531.3	528.2
9	529.7	533.3	531.7	533.4	533.7	534.1	538.3	534.1	531.5	530.8	531.3	528.9
10	529.9	533.0	530.8	535.0	533.8	534.3	538.0	534.0	531.4	531.7	531.2	529.2
11	530.3	532.1	530.9	537.6	534.0	534.9	538.2	533.8	531.4	532.2	531.5	529.5
12	530.6	532.2	531.0	537.7	534.2	536.3	538.3	533.5	531.3	532.4	531.5	529.9
13	530.7	532.0	531.2	536.7	534.5	536.5	538.3	533.4	531.2	532.4	531.5	529.9
14	531.0	531.7	531.1	536.2	535.8	536.5	538.5	533.2	531.2	531.9	531.4	529.8
15	531.2	531.5	531.1	535.8	535.9	536.7	538.6	533.1	531.2	531.8	531.4	529.7
16	531.2	531.4	532.2	535.4	535.5	537.2	538.5	532.9	531.2	531.9	531.2	529.5
17	532.6	531.4	532.2	535.1	535.1	537.9	538.4	532.8	531.2	531.9	531.0	529.5
18	534.5	531.0	532.3	534.8	534.8	538.5	538.0	532.7	531.2	531.8	530.9	529.5
19	534.5	530.0	531.7	534.7	535.3	538.8	537.6	532.6	530.9	531.8	530.8	529.6
20	534.4	528.3	531.3	534.7	535.8	539.1	537.4	532.5	530.8	531.8	530.8	529.6
21	534.3	527.7	531.1	534.5	536.5	539.0	537.0	532.4	530.8	531.8	530.8	529.6
22	533.7	527.6	531.0	534.2	536.0	539.1	536.7	532.3	530.7	531.9	530.7	529.7
23	532.8	527.7	531.1	534.0	535.7	539.5	536.4	532.2	530.8	532.1	530.5	529.9
24	532.7	528.2	531.2	533.9	535.4	539.7	536.2	532.2	530.8	532.1	530.4	530.2
25	533.4	528.9	531.3	533.9	535.2	539.9	535.8	532.2	530.8	532.3	530.4	530.4
26	533.2	529.3	531.3	533.8	535.4	540.2	535.6	532.3	530.8	532.2	530.3	530.6
27	533.1	530.4	531.1	533.7	535.6	540.4	535.4	532.2	530.8	532.0	529.8	530.7
28	533.5	531.9	530.9	533.6	535.8	541.0	535.6	532.3	530.7	532.2	529.8	530.8
29	532.7		531.0	534.0	535.8	540.9	535.4	532.2	530.6	531.7	529.7	530.9
30	532.6		531.1	534.8	535.8	540.8	535.5	532.2	530.6	531.5	529.5	531.2
31	532.6		531.8		535.4		535.2	532.1		531.5		531.3

Missouri River.—Plattsmouth, Neb., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	531.3	530.8	533.9	534.8	534.8	538.3	540.8	535.5	533.2	531.3	531.7	528.8
2	531.3	530.8	534.6	534.8	534.9	538.7	540.7	535.6	533.1	531.2	531.6	529.1
3	531.4	530.8	534.7	534.8	534.5	539.4	540.5	535.4	532.8	531.2	531.6	528.9
4	531.4	530.7	533.8	534.8	534.2	539.4	540.5	535.4	532.8	531.2	531.6	529.0
5	531.5	530.6	533.0	535.1	534.4	538.8	540.5	535.0	532.7	531.2	531.5	529.2
6	531.5	530.4	532.6	535.3	534.3	538.7	540.5	534.8	532.5	531.1	531.3	529.3
7	531.5	530.3	532.1	535.2	534.6	538.5	540.8	534.6	532.4	531.2	531.3	529.3
8	531.3	530.4	532.2	535.2	534.9	538.7	540.9	534.7	532.2	531.2	531.3	529.5
9	531.2	530.4	532.8	535.2	535.1	538.2	541.2	534.8	532.1	531.1	531.2	529.5
10	531.2	530.4	533.8	535.1	535.4	538.0	541.4	534.7	531.8	531.1	531.1	529.6
11	531.0	530.4	533.2	534.8	536.0	538.0	541.5	534.6	531.8	531.0	531.0	529.8
12	530.8	530.5	533.3	535.2	536.2	537.8	541.5	534.6	531.8	530.9	530.9	529.8
13	530.8	530.6	534.0	535.8	536.4	537.5	540.8	534.5	531.7	530.8	531.0	530.1
14	530.8	530.8	534.3	535.9	537.1	537.5	540.1	534.6	531.7	530.9	531.0	530.2
15	530.8	530.9	534.5	535.9	538.2	537.5	539.8	534.9	531.7	530.8	530.8	530.3
16	530.8	530.9	534.6	537.6	538.7	537.6	539.4	535.0	531.7	530.8	530.5	530.0
17	530.8	530.9	534.7	537.5	539.2	538.5	538.7	535.2	531.8	531.1	530.2	529.5
18	530.8	531.0	534.4	539.3	539.8	538.6	538.2	535.4	531.7	531.3	529.7	528.9
19	530.9	531.2	534.8	539.6	539.3	538.8	538.2	535.7	531.7	531.2	529.9	528.6
20	530.8	531.4	533.6	538.1	539.0	538.7	538.0	535.4	531.7	531.2	530.7	528.1
21	530.8	531.4	533.3	537.1	538.1	539.8	537.7	535.3	531.5	531.2	530.9	527.5
22	530.8	531.5	533.3	536.4	538.1	540.3	537.4	534.9	531.5	531.1	530.8	527.3
23	530.8	531.8	533.0	535.6	538.5	540.7	537.1	534.8	531.6	531.0	530.6	527.3
24	530.8	531.8	534.1	535.5	540.5	540.7	537.0	534.4	531.7	531.0	530.8	527.2
25	530.8	531.9	536.5	535.6	540.7	540.7	536.4	534.1	531.8	531.2	530.9	527.1
26	530.8	532.2	536.1	535.5	540.2	540.9	536.3	533.8	531.8	531.3	530.6	528.0
27	530.8	532.7	535.6	535.4	539.4	541.2	536.3	533.8	531.6	531.5	530.1	528.8
28	530.8	533.3	535.2	535.2	539.3	541.6	536.2	533.9	531.5	531.9	530.0	529.6
29	530.8		534.8	534.8	538.9	541.4	536.0	533.8	531.4	531.9	529.7	530.0
30	530.8		534.7	534.8	538.5	541.2	535.7	533.7	531.3	531.7	529.1	530.2
31	530.8		534.7	534.8	538.3		535.5	533.5				530.6

Missouri River. — Plattsmouth, Neb., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	530.8	531.4	532.7	537.7	535.2	536.6	539.6	536.0	533.0	532.3	531.6	530.7
2	530.9	531.4	532.8	538.1	535.3	537.1	539.7	535.8	532.8	532.4	531.5	531.2
3	531.1	531.5	532.9	540.1	535.4	538.1	539.8	535.6	532.8	532.6	531.5	531.5
4	531.2	531.6	533.1	540.1	535.2	538.3	539.9	535.2	532.9	533.1	531.5	531.4
5	531.3	531.5	533.4	541.4	535.0	538.6	539.8	534.8	532.9	533.2	531.6	530.9
6	531.4	531.5	533.5	541.6	535.3	538.8	539.8	534.5	532.9	533.0	531.6	530.8
7	531.4	531.5	533.6	541.6	536.7	539.1	539.8	534.4	533.0	532.6	531.7	530.8
8	531.4	531.3	533.6	541.0	536.1	539.4	539.8	534.2	533.0	532.3	531.7	530.7
9	531.6	531.4	533.7	538.1	535.9	539.6	539.7	533.8	532.8	532.0	531.8	530.5
10	531.7	531.3	534.3	536.9	535.6	539.8	539.6	533.4	532.6	531.8	531.7	530.6
11	531.8	531.4	534.3	536.6	535.0	540.2	539.5	533.1	532.5	531.7	531.6	530.6
12	532.0	531.5	534.7	536.1	535.4	540.3	539.4	533.1	532.4	531.8	531.6	530.7
13	532.1	531.6	535.1	535.6	535.2	540.2	539.2	533.1	532.2	531.9	531.5	530.8
14	532.2	531.5	535.9	535.5	535.1	540.1	539.1	533.2	532.1	531.9	531.4	532.0
15	532.3	531.4	536.1	534.7	535.0	540.1	539.0	533.2	532.0	531.8	531.4	531.5
16	532.4	531.5	535.4	534.5	535.1	540.4	538.8	533.2	531.8	531.8	531.5	530.9
17	532.5	531.6	535.4	534.5	535.1	540.4	538.8	533.1	531.8	531.7	531.5	529.9
18	532.6	531.6	534.0	534.6	535.1	540.2	538.5	533.0	531.7	531.7	531.6	529.7
19	532.8	531.6	534.4	534.8	535.4	540.1	538.1	533.3	531.6	531.5	531.6	529.6
20	532.7	531.6	533.9	535.2	535.4	540.4	537.6	533.5	531.6	531.6	531.6	529.5
21	532.5	531.6	533.9	535.3	535.4	540.4	537.3	533.7	531.7	531.5	531.7	529.6
22	532.7	531.6	534.8	535.4	535.5	540.2	537.2	533.6	531.7	531.6	531.8	529.7
23	532.8	531.6	536.2	535.5	535.5	540.1	537.1	533.3	531.9	531.6	530.6	529.9
24	532.6	531.7	540.0	535.5	535.7	540.3	536.7	533.2	532.1	531.7	530.5	530.1
25	532.5	531.7	537.9	535.4	535.7	540.3	536.7	533.2	532.1	531.6	530.3	530.2
26	532.4	531.9	537.7	535.3	535.8	540.1	536.7	533.2	532.3	531.5	530.1	530.4
27	532.2	531.9	537.3	535.4	535.9	539.9	536.5	533.4	532.5	531.4	529.8	530.4
28	531.8	532.1	537.3	535.2	536.0	539.9	536.4	533.3	532.4	531.4	529.6	530.5
29	531.7	532.4	537.1	535.0	536.1	539.8	536.4	533.3	532.3	531.5	529.9	530.6
30	531.5		537.2	.....	536.2	539.8	536.4	533.2	532.2	531.6	530.1	530.8
31	531.5		537.3		536.3		536.3	533.1		531.5		530.7

Missouri River.--Plattsmouth, Neb., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	530.87	532.10	532.87	534.92	534.93	536.52	539.37	535.85	532.80	531.75	531.60	531.92
2	531.10	532.15	533.33	534.85	534.77	536.12	539.47	535.65	532.90	531.62	531.55	531.95
3	531.53	532.50	533.90	534.72	534.67	536.20	539.47	535.50	533.00	531.55	531.55	531.95
4	532.15	532.72	534.45	534.77	534.50	536.23	539.33	535.47	533.02	531.50	531.48	531.90
5	532.82	532.87	535.40	534.87	534.52	536.52	539.40	535.43	532.85	531.38	531.45	531.55
6	532.77	533.02	536.22	534.97	534.30	536.62	539.55	535.38	532.70	531.30	531.52	531.00
7	532.62	533.32	536.42	535.05	534.00	536.90	539.58	535.27	532.60	531.25	531.60	530.65
8	532.55	533.20	536.75	535.00	533.90	536.97	539.33	535.30	532.68	531.25	531.77	528.90
9	532.45	532.97	537.32	535.00	533.77	539.32	538.93	535.30	532.83	531.30	531.97	528.85
10	532.22	533.02	537.20	535.32	533.72	539.90	538.45	535.25	532.85	531.33	532.12	530.80
11	532.13	533.22	537.90	535.35	533.52	539.92	538.02	535.48	532.90	531.43	532.12	531.20
12	532.18	533.42	536.97	535.00	533.50	539.95	538.07	535.15	533.00	531.60	532.05	531.35
13	532.10	533.67	536.30	536.07	533.42	540.30	537.95	534.97	533.17	531.60	531.88	531.60
14	532.20	533.77	535.57	536.27	533.37	541.05	537.20	534.62	533.27	531.55	531.85	531.65
15	532.23	533.75	535.30	535.95	533.77	541.65	537.07	534.35	533.28	531.57	531.87	531.75
16	532.30	533.42	535.25	535.42	534.75	541.87	537.02	534.08	533.12	531.60	532.03	531.95
17	532.37	533.05	535.17	534.50	535.22	542.05	536.90	533.95	533.07	531.58	532.05	531.90
18	532.35	532.92	535.00	533.75	534.60	541.75	536.82	533.70	533.03	531.57	532.07	531.85
19	532.17	532.82	535.10	533.22	534.20	541.20	536.72	533.53	532.95	531.60	531.97	531.90
20	532.23	532.67	534.80	532.90	534.57	541.00	536.70	533.25	532.85	531.55	531.95	531.87
21	532.22	532.42	535.45	533.05	534.75	540.95	536.67	533.23	532.73	531.47	531.97	531.85
22	532.17	532.30	533.90	533.37	535.77	540.77	536.82	533.20	532.57	531.43	532.07	532.45
23	532.10	532.30	534.32	533.77	535.20	540.15	536.77	533.30	532.43	531.40	532.05	532.35
24	532.07	532.32	535.85	534.02	534.65	540.10	536.87	533.58	532.30	531.40	532.02	532.15
25	532.07	532.22	535.80	534.32	534.27	539.95	537.05	533.47	532.22	531.40	531.95	532.35
26	532.12	532.37	535.12	534.40	533.53	539.70	536.97	533.38	532.10	531.40	532.02	532.60
27	532.12	532.57	534.87	534.57	534.22	539.55	536.85	533.17	532.02	531.40	531.92	531.90
28	532.07	532.65	534.75	534.77	535.15	539.35	536.77	533.07	531.98	531.55	531.90	531.85
29	532.10		534.67	534.63	535.02	539.15	536.63	533.00	531.90	531.60	531.90	531.75
30	532.02		534.72	534.77	536.22	539.33	536.45	532.83	531.85	531.60	531.85	531.60
31	532.02		534.90		536.62		536.22	532.77		531.60		531.58

Missouri River.—Omaha, Neb., 1872.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1					550.6	550.8	558.4	556.4	.....	.....	.....	.....
2					550.4	552.8	557.9	557.0	.....	.....	.....	.....
3					550.6	552.9	557.3	555.7	.....	.....	.....	.....
4					550.9	552.7	557.2	555.6	.....	.....	.....	.....
5					551.1	553.0	557.6	555.6	.....	.....	.....	.....
6					550.9	553.9	557.9	555.3	.....	.....	.....	.....
7					550.7	553.6	558.2	555.1	.....	.....	.....	.....
8					550.7	553.4	558.3	554.9	.....	.....	.....	.....
9					550.9	553.9	558.3	554.7	.....	.....	.....	.....
10				549.8	551.3	554.8	559.3	554.5	.....	.....	.....	.....
11				550.0	551.9	556.0	560.3	554.3	.....	.....	.....	.....
12				550.1	551.9	556.2	560.3	554.2	.....	.....	.....	.....
13				550.4	551.8	556.9	559.9	554.2	.....	.....	.....	.....
14				550.9	551.1	557.2	558.9	554.0	.....	.....	.....	.....
15				551.1	550.8	557.2	558.1	553.9	.....	.....	.....	.....
16				550.7	550.3	557.2	557.7	553.9	.....	.....	.....	.....
17				550.3	550.3	557.4	557.1	553.9	.....	.....	.....	.....
18				550.6	550.3	557.4	557.0	553.9	.....	.....	.....	.....
19				550.8	550.2	557.4	557.3	553.9	.....	.....	.....	.....
20				550.7	550.4	556.9	557.8	553.9	.....	.....	.....	.....
21				550.3	550.2	557.2	557.9	553.8	.....	.....	.....	.....
22				550.0	549.9	557.6	558.2	553.4	.....	.....	.....	.....
23				549.9	550.1	557.9	558.2	...	.....	.....	.....	.....
24				550.7	550.3	558.2	558.3	551.9	.....	.....	.....	.....
25				551.6	550.4	558.6	558.6	.....	.....	.....	.....	.....
26				551.6	...	558.4	558.0	...	.....	.....	.....	.....
27				552.6	552.0	558.8	557.5	...	.....	.....	.....	.....
28				552.6	551.9	558.9	557.0	...	.....	.....	.....	.....
29				551.9	551.1	559.2	556.9	...	.....	.....	.....	.....
30				551.4	550.7	558.9	557.0	...	.....	.....	.....	.....
31					550.7	.....	556.8	...	.....	.....	.....	.....

Missouri River.—Omaha, Neb., 1873.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1				557.4	.....	557.6	560.7	554.7	551.3	549.4	548.5	547.8
2				557.6	.....	557.4	561.7	554.9	551.2	549.4	548.3	547.3
3				556.6	552.6	557.1	561.6	554.9	551.1	549.3	548.4	547.3
4				554.6	.....	557.6	561.8	554.6	551.1	549.3	548.4	.....
5				553.6	552.9	557.1	561.6	554.1	551.1	549.2	548.4	.....
6					552.6	556.9	560.6	553.9	550.9	549.1	548.3	.....
7				553.6	552.4	557.6	559.6	553.6	550.9	549.1	548.3	.....
8				556.1	552.4	.....	559.6	553.6	550.7	549.0	548.3	.....
9				558.1	552.4	558.9	558.9	552.7	550.6	549.0	548.2	.....
10				559.1	552.1	558.3	558.2	553.1	550.6	549.0	548.2	.....
11				560.6	.....	558.3	557.8	552.7	549.7	548.9	548.2	.....
12				560.8	.....	558.3	.....	552.6	550.3	548.9	548.2	.....
13				556.6	.....	557.9	.....	552.6	550.1	548.9	548.2	.....
14			550.1	556.6	.....	557.6	.....	552.6	550.0	548.9	548.1	.....
15			550.1	555.6	.....	556.7	.....	552.6	549.9	548.9	548.1	.....
16			550.1	554.9	.....	557.3	.....	552.6	549.9	548.9	548.1	.....
17			551.8	554.1	.....	558.6	557.0	551.7	549.9	548.9	548.1	.....
18			551.8	553.4	.....	559.2	.....	552.3	549.9	548.8	548.1	.....
19			551.9	553.1	.....	559.3	.....	552.3	549.8	548.7	548.0	.....
20			550.7	.....	.....	558.8	.....	552.2	549.7	548.6	548.2	.....
21			550.6	553.1	.....	558.6	.....	552.1	549.7	548.6	548.4	.....
22			551.1	552.9	.....	.....	.....	551.9	549.6	548.6	548.4	.....
23				552.9	.....	558.7	556.6	551.6	549.6	548.6	548.5	.....
24			550.9	553.2	.....	559.8	556.6	551.5	549.5	548.6	548.6	.....
25			550.8	553.6	.....	560.2	556.8	550.7	549.5	548.6	548.4	.....
26			551.1	553.1	.....	559.7	556.9	551.3	549.5	548.6	548.3	.....
27			551.2	553.1	.....	560.7	556.3	551.2	548.7	548.6	548.4	.....
28			548.7	553.1	.....	560.9	555.9	551.2	548.7	548.6	548.4	.....
29			549.6	552.9	.....	561.1	555.8	551.2	548.7	548.6	548.8	.....
30			552.8	552.6	.....	561.3	555.6	550.7	548.7	548.5	547.7	.....
31			554.6	.....	.....	.....	555.5	551.4	.....	548.5	.....	.....

Missouri River.—Omaha, Neb., 1874.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1				549.9	551.1	550.5	556.5	551.9	550.4	549.1	548.4	.....
2				549.7	550.4	550.5	556.2	551.7	550.3	549.0	548.4	.....
3				550.5	550.4	553.0	556.5	551.8	550.0	548.9	548.3	.....
4				548.7	550.4	554.2	556.9	551.6	549.9	548.9	548.3	.....
5				549.4	550.2	554.7	557.2	551.4	549.6	548.8	548.3	.....
6				549.4	550.1	554.7	557.5	551.6	549.6	548.6	548.3	.....
7				549.4	550.2	558.1	557.8	551.6	549.4	548.6	548.3	.....
8				549.3	550.4	557.9	557.5	551.5	549.4	548.6	548.3	.....
9				549.3	550.4	556.7	556.4	551.3	549.4	548.5	548.2	.....
10				549.3	550.5	556.8	555.5	551.2	549.4	548.6	548.2	.....
11				549.2	550.3	556.7	555.1	551.2	549.5	548.6	548.2	.....
12				549.3	550.3	557.7	554.6	551.0	549.6	548.6	548.2	.....
13				549.2	550.2	558.1	554.4	551.0	549.6	548.6	548.2	.....
14				548.9	550.1	558.0	553.9	550.9	549.8	548.5	548.2	.....
15				548.9	550.2	558.4	553.7	550.9	549.6	548.5	548.1	.....
16				549.0	550.3	558.4	553.6	550.6	549.5	548.5	548.1	.....
17				549.1	550.2	558.4	553.6	550.5	549.4	548.4	548.1	.....
18				549.2	550.2	558.4	553.4	550.4	549.4	548.5	548.1	.....
19			551.1	549.4	550.3	558.0	553.4	550.3	549.4	548.5	548.1	.....
20			549.7	549.6	550.4	558.0	553.6	550.2	549.4	548.4	548.1	.....
21			550.9	550.6	551.8	557.3	553.6	550.2	549.5	548.4	547.9	.....
22			551.3	552.6	552.6	556.9	553.6	550.2	549.3	548.5	547.9	.....
23			551.9	552.9	551.7	556.6	553.6	550.5	549.1	548.4	547.9	.....
24			551.4	552.2	552.3	556.5	553.6	552.7	549.2	548.5	.....	.....
25			551.1	551.9	551.9	556.5	553.1	553.2	549.3	548.5	.....	.....
26			551.0	551.5	550.8	556.6	552.9	552.5	549.1	548.4	.....	.....
27			550.6	550.9	551.5	556.6	552.6	551.9	549.2	548.4	.....	.....
28			550.4	550.9	551.3	556.5	552.4	551.6	549.1	548.5	.....	.....
29			550.3	551.1	551.2	556.6	552.1	551.4	549.1	548.5	.....	.....
30			549.9	551.1	550.9	556.7	552.3	550.9	549.1	548.4	.....	.....
31			549.9	.....	550.8	.....	552.1	550.6	.....	548.4	.....	.....

Missouri River.—Omaha, Neb., 1875.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1				550.8	559.9	555.7	558.0	554.4	552.4	550.8	547.6	.....
2				550.6	558.4	556.1	557.6	554.1	552.4	550.7	548.5	.....
3				550.4	557.8	556.3	558.0	554.0	552.3	550.5	548.4	.....
4				550.9	557.1	556.0	557.4	554.0	554.1	550.4	548.4	.....
5				553.4	556.5	556.1	556.9	553.9	555.6	550.4	548.4	.....
6				553.8	556.3	556.4	556.8	553.7	555.4	550.4	548.4	.....
7				554.1	555.9	556.6	557.0	553.4	554.4	550.3	548.4	.....
8				554.4	555.6	556.6	556.5	553.4	553.9	550.3	548.4	.....
9				555.4	555.2	556.4	556.4	553.4	553.6	550.1	548.4	.....
10				555.3	554.9	555.6	.....	553.3	553.4	549.9	548.3	.....
11				554.6	554.4	555.5	556.4	553.2	553.4	549.7	548.3	.....
12				554.1	554.0	555.4	556.4	553.1	553.2	549.6	548.3	.....
13				553.6	554.1	555.1	556.4	553.2	553.1	549.6	548.2	.....
14				555.4	553.9	554.9	556.3	553.2	553.1	549.5	548.2	.....
15				556.4	553.6	554.5	555.9	553.1	553.4	549.4	548.1	.....
16				556.9	553.4	554.2	555.8	553.0	553.4	549.3	548.1	.....
17				554.4	553.4	554.2	555.4	552.9	553.6	549.3	548.0	.....
18				555.6	553.4	554.4	555.2	552.8	553.4	549.2	548.0	.....
19				555.4	553.3	554.9	554.9	552.6	553.0	549.3	547.9	.....
20				555.3	553.1	557.4	554.8	552.4	552.7	549.2	547.9	.....
21				554.6	553.2	557.8	554.7	552.2	552.7	549.2	.....	.....
22				555.8	553.4	557.9	554.7	552.1	552.5	549.1	.....	.....
23				558.8	553.4	558.5	554.9	552.1	552.4	549.1	.....	.....
24				560.4	553.4	559.5	555.0	552.0	552.2	549.1	.....	.....
25				562.1	553.3	559.6	555.0	552.0	551.9	549.2	.....	.....
26				563.1	553.3	559.7	554.9	552.3	551.7	549.1	.....	.....
27				563.3	553.2	560.9	554.9	552.8	551.5	549.1	.....	.....
28				563.6	553.2	560.9	554.9	552.9	551.4	549.0	.....	.....
29				562.6	553.1	560.0	554.8	552.7	551.1	548.9	.....	.....
30			551.6	561.3	553.2	559.1	554.8	552.6	550.9	548.9	.....	.....
31			551.6	.....	554.7	.....	554.8	552.4	.....	548.7	.....	.....

Missouri River.—Omaha, Neb., 1876.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1				550.3	552.3	554.6	559.1	554.3	552.7	551.7	549.7	.....
2				551.4	552.1	554.9	559.1	554.2	552.9	551.7	549.8	.....
3				551.3	552.0	555.6	559.3	554.1	552.9	551.7	549.7	.....
4				551.4	551.9	555.2	559.5	554.1	552.9	551.5	549.6	.....
5				551.5	551.9	555.4	559.4	554.0	554.9	551.4	549.5	.....
6				551.4	551.9	555.7	558.4	554.0	554.3	551.3	549.4	.....
7				551.4	552.0	556.9	558.3	554.0	553.8	551.2	549.4	.....
8				551.1	551.9	556.9	558.0	554.0	553.1	551.1	549.4	.....
9				551.4	551.8	557.7	558.0	554.1	552.9	551.0	549.3	.....
10				551.5	551.7	558.6	558.0	554.0	552.8	550.9	549.2	.....
11				551.4	551.7	558.9	557.8	553.9	552.6	550.9	549.0	.....
12				551.4	551.5	559.2	557.6	553.9	552.5	550.7	548.8	.....
13				554.1	551.4	559.1	557.7	554.0	553.1	550.6	548.7	.....
14				557.3	551.4	559.0	557.2	553.9	551.7	550.4	548.5	.....
15				559.0	551.4	558.9	557.0	553.9	551.9	550.4	548.4	.....
16				559.1	551.2	558.8	556.9	553.9	551.9	550.4	548.2	.....
17				558.0	551.1	558.6	556.8	553.7	551.9	550.3	548.1	.....
18				557.0	551.1	558.9	556.7	553.9	551.9	550.2	547.9	.....
19				556.4	551.0	559.9	556.4	554.1	551.9	550.1	547.7	.....
20				555.6	551.1	560.4	556.4	554.1	552.1	550.0	547.6	.....
21				555.4	551.2	560.6	556.3	554.0	552.0	550.0	.....	.....
22				555.1	551.3	560.0	555.9	553.9	552.4	549.9	.....	.....
23				554.7	551.4	559.3	555.7	553.8	552.7	549.9	.....	.....
24				554.5	551.5	558.2	555.5	553.8	552.6	549.8	.....	.....
25				554.4	551.5	558.3	555.3	553.6	552.3	549.9	.....	.....
26				554.3	551.5	558.5	555.2	553.3	552.0	549.9	.....	.....
27				554.1	554.2	558.9	554.9	553.0	551.9	549.8	.....	.....
28				553.4	554.4	559.0	554.9	552.7	551.9	549.8	.....	.....
29				553.1	554.3	559.2	554.7	552.4	551.7	549.7	.....	.....
30				552.6	554.0	558.9	554.4	552.2	551.7	549.7	.....	.....
31					553.9	.....	554.3	552.4	.....	549.6	.....	.....

H. Ex. 28—19

Missouri River.—Omaha, Neb., 1877.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1			551.1	553.6	554.3	558.2	560.4	556.4	553.0	551.4	551.5	551.1
2			551.4	553.8	554.3	558.1	560.7	556.3	552.9	551.4	551.5	551.1
3			551.4	553.9	554.2	558.0	560.4	556.1	552.9	551.4	551.4	551.1
4			551.6	554.1	554.2	558.0	560.1	555.9	552.9	551.4	551.4	551.0
5			551.6	556.4	554.3	558.1	559.9	555.9	552.8	551.5	551.4	551.1
6			551.6	559.8	554.2	557.4	559.4	556.4	552.8	551.4	551.4	551.0
7			551.7	561.6	554.2	558.5	559.0	556.3	552.7	551.5	551.4	551.0
8				561.3	554.1	559.9	560.1	556.1	552.8	551.5	551.4	551.0
9				558.9	554.1	561.4	560.4	555.8	552.9	551.4	551.4	551.0
10				557.9	554.1	561.9	559.1	555.4	552.8	551.4	551.4	551.0
11				556.6	553.9	562.3	557.9	555.0	552.7	551.4	551.4	550.9
12				556.1	554.0	562.4	557.4	554.8	552.7	551.4	551.6	550.9
13				555.9	553.9	562.9	557.2	554.6	552.5	551.4	551.7	550.9
14				556.0	553.9	562.7	557.1	554.5	552.4	551.5	551.7	550.9
15				555.9	553.9	561.9	558.2	554.4	552.4	551.7	551.6	550.9
16			553.6	555.9	553.9	561.1	559.1	554.3	552.3	551.9	551.5	550.9
17			553.1	555.6	553.8	560.4	559.2	553.7	552.2	551.7	551.4	550.9
18			553.4	555.4	553.9	559.6	559.4	553.9	552.1	551.9	551.4	550.8
19			552.9	555.3	553.9	559.3	559.3	553.7	552.0	552.0	551.4	550.7
20			551.6	555.2	553.8	558.9	559.5	553.5	551.9	552.1	551.4	549.7
21			552.8	554.9	553.7	558.6	559.4	553.4	551.8	552.0	551.4	550.4
22			552.9	554.9	553.6	558.1	559.3	553.4	551.8	551.8	551.4	551.1
23		553.6	553.1	554.8	553.4	558.2	558.8	553.4	551.7	551.7	551.4	550.6
24		551.6	552.8	554.6	553.9	558.4	557.9	553.2	551.6	551.6	551.3	551.3
25		551.6	552.7	554.4	554.6	558.6	557.9	553.0	551.6	551.6	551.3	551.4
26		551.6	552.6	554.4	555.9	558.9	557.4	552.9	551.5	551.6	551.3	551.5
27		551.4	552.4	554.4	558.1	559.2	556.4	552.9	551.4	551.6	551.2	551.4
28		551.1	552.6	554.3	559.1	559.6	556.8	553.0	551.4	551.6	551.2	551.1
29			552.9	.....	559.6	560.1	556.4	553.0	551.4	551.5	551.1	551.0
30			553.3	.....	559.1	560.3	556.4	552.9	551.4	551.5	551.1	550.9
31			553.6	.....	558.4	.....	556.4	553.0	551.4	551.4	551.1	550.9

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	550.9	553.1	551.4	553.4	558.9	559.9	562.2	557.4	553.8	553.2	552.4	552.1
2	550.9	552.9	551.4	553.2	558.5	559.4	562.0	557.1	553.7	553.1	552.5	552.1
3	550.7	552.9	551.4	553.1	558.4	558.9	562.0	556.9	553.5	553.0	552.4	552.1
4	550.5	552.9	551.7	553.1	558.4	559.4	561.7	556.9	553.7	552.9	552.4	552.1
5	.....	552.7	551.8	553.0	558.3	561.2	561.4	556.9	553.5	552.8	552.4	552.1
6	.....	552.5	551.8	552.9	557.8	562.3	561.0	556.7	553.5	552.7	552.4	552.1
7	.....	552.4	551.9	552.9	557.4	562.9	560.7	556.6	553.7	552.7	552.4	552.1
8	.....	552.3	551.8	553.2	557.0	563.3	560.8	556.7	553.7	552.7	.....	552.1
9	.....	552.1	551.9	553.3	556.9	563.0	560.6	556.5	553.8	552.6	.....	552.1
10	.....	552.0	551.9	553.3	556.6	562.8	560.3	556.4	553.6	552.6	552.3	552.0
11	.....	551.9	552.0	553.4	556.4	562.8	560.4	556.0	553.5	552.5	.....	552.0
12	.....	552.2	552.1	553.4	556.1	562.4	559.9	555.8	533.5	552.5	.....	552.0
13	.....	552.6	552.3	553.0	555.9	561.5	559.4	555.5	553.5	552.5	552.4	552.0
14	.....	552.8	552.3	552.9	555.4	560.9	559.1	555.5	553.5	552.4	552.4	551.9
15	.....	552.7	552.1	552.8	554.4	560.4	558.9	555.3	553.5	552.4	552.4	.....
16	.....	552.4	552.0	552.7	554.9	560.4	559.2	555.0	553.4	552.4	552.4	553.9
17	553.9	552.0	552.0	552.8	554.8	560.2	559.2	555.1	553.2	552.5	552.4	553.7
18	554.1	551.2	551.9	552.9	554.7	560.3	559.3	554.9	553.2	552.4	552.4	552.7
19	554.2	551.0	551.9	552.9	554.5	561.1	559.0	554.4	553.1	552.4	552.4	552.6
20	554.2	550.9	551.9	552.9	554.5	561.9	558.4	554.9	553.1	552.4	552.4	552.7
21	554.3	551.3	551.9	553.0	554.5	562.4	558.0	554.9	553.2	552.4	552.4	552.6
22	554.3	551.4	551.8	553.9	554.6	562.7	557.9	554.6	553.3	552.3	552.4	552.9
23	554.2	551.5	551.7	553.9	555.9	563.1	557.9	554.4	553.7	552.3	552.3	553.2
24	554.1	551.8	551.7	554.7	558.4	563.3	557.9	554.4	553.7	.....	552.3	553.5
25	553.9	552.1	551.7	556.5	560.3	563.4	558.2	554.4	553.6	.....	552.3	553.4
26	553.9	551.9	551.9	559.0	561.0	563.4	559.9	554.1	553.5	.....	552.3	553.3
27	553.7	551.5	552.1	560.1	561.9	562.9	560.1	553.9	553.3	.....	552.3	553.4
28	553.4	551.4	552.1	560.4	562.4	562.4	559.0	553.9	553.2	.....	552.3	553.4
29	553.4	.....	554.9	559.9	562.4	562.2	558.2	553.9	553.2	.....	552.2	553.4
30	553.4	.....	554.7	559.0	561.6	562.5	558.2	553.9	553.2	552.4	552.1	553.3
31	553.3	.....	553.9	.....	560.7	.....	558.4	553.9	553.2	552.4	.....	553.1

Missouri River.—Omaha, Neb., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	553.1	553.5	553.5	556.5	555.9	557.4	562.0	558.5	552.8	551.3	551.3	.....
2	553.0	553.5	553.7	556.4	.....	558.0	562.0	558.3	552.8	551.3	551.3	.....
3	553.0	553.5	553.7	556.3	555.9	558.3	561.9	557.7	552.7	551.2	551.3	.....
4	553.0	553.6	553.7	.....	555.9	558.2	561.7	557.2	552.7	551.2	551.4	.....
5	553.1	553.6	553.7	.....	556.0	558.0	561.6	556.7	552.6	551.2	551.4	.....
6	553.1	553.6	553.6	.....	555.8	558.4	560.7	556.1	552.5	551.2	551.6	.....
7	553.3	553.5	553.8	.....	555.6	558.7	560.3	555.7	552.4	551.2	551.6	.....
8	553.3	553.5	554.7	.....	555.6	558.6	560.1	555.4	552.2	551.1	551.6	.....
9	553.3	553.5	552.1	.....	555.5	558.4	559.9	555.1	552.2	551.1	551.4	.....
10	553.4	553.5	552.0	.....	555.4	558.0	559.9	555.8	552.1	551.1	551.4	.....
11	553.5	553.5	552.0	.....	555.2	557.7	559.9	554.7	552.0	551.1	551.4	.....
12	553.6	553.4	552.2	.....	554.8	557.6	559.6	534.6	551.8	551.3	551.3	.....
13	553.7	553.4	552.5	.....	554.8	557.6	559.3	554.4	551.7	551.2	551.2	.....
14	553.7	553.4	552.6	.....	554.7	557.6	559.1	554.3	551.7	551.2	551.1	.....
15	553.7	553.4	552.3	557.2	554.9	558.8	558.9	554.2	551.6	551.2	551.1	.....
16	553.7	553.5	552.2	557.0	555.4	560.1	558.7	554.1	551.6	551.3	551.1	.....
17	553.6	553.5	552.2	556.7	555.4	561.3	558.7	553.9	551.5	551.4	551.1	.....
18	553.6	553.6	552.4	556.5	555.3	561.5	558.4	553.8	551.4	551.2	551.1	.....
19	553.6	553.6	552.3	556.4	555.2	560.8	558.2	553.6	551.2	551.1	551.1	.....
20	553.5	553.6	552.4	556.2	555.2	560.1	558.1	553.6	551.2	551.1	551.0	.....
21	553.5	553.6	552.3	556.1	555.1	559.6	558.0	553.6	551.2	551.1	551.1	.....
22	553.5	553.6	552.1	555.1	555.4	560.4	558.1	553.6	551.2	551.2	551.1	.....
23	553.5	553.6	552.0	555.1	555.8	561.4	557.9	553.6	551.2	551.2	551.1	.....
24	553.5	553.6	551.9	555.1	556.1	561.8	557.7	553.4	551.1	551.2	551.1	.....
25	553.5	553.6	553.6	555.0	556.0	562.1	557.6	553.4	551.1	551.2	550.9	.....
26	553.5	553.5	555.6	554.9	556.1	562.4	557.4	553.4	551.0	551.2	550.9	.....
27	553.5	553.6	556.2	555.0	556.0	562.7	557.1	553.3	551.0	551.2	550.9	.....
28	553.5	553.6	556.3	554.9	557.2	562.8	557.4	553.2	551.0	551.2	550.8	.....
29	553.5	.....	555.9	554.8	557.3	562.6	557.6	553.2	551.1	551.2	550.6	.....
30	553.5	.....	555.6	555.1	557.2	562.2	557.7	553.1	551.2	551.2	550.1	.....
31	553.5	.....	555.6	.....	557.1	.....	558.3	553.0	.....	551.2	.....	.....

Missouri River.—Omaha, Neb., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	551.1	.....	552.5	552.0	553.3	.....	562.1	.....	556.1	552.3	551.4	551.0
2	551.1	.....	550.6	552.0	553.3	.....	562.1	.....	556.3	552.3	551.3	551.5
3	551.1	554.3	550.9	552.4	553.2	.....	561.9	.....	557.0	552.2	551.3	551.5
4	551.1	554.6	550.5	554.4	553.0	.....	.....	.....	556.8	552.2	551.4	551.4
5	551.1	554.6	550.1	559.8	552.9	.....	.....	.....	556.9	552.1	551.4	551.4
6	551.1	554.5	550.2	561.0	552.9	557.5	.....	.....	555.4	552.0	551.4	551.2
7	551.1	554.5	550.3	559.8	552.9	557.2	.....	.....	555.0	551.9	551.4	551.2
8	551.1	554.6	551.1	558.9	552.9	556.1	.....	558.1	554.9	551.9	551.4	551.3
9	551.1	554.0	551.2	557.3	553.0	555.7	.....	558.1	554.0	551.8	551.5	551.5
10	551.1	554.2	551.4	556.9	553.0	555.7	.....	557.7	554.9	551.8	551.5	551.6
11	551.1	554.2	551.3	556.2	553.0	555.8	.....	557.6	554.7	551.8	551.5	551.8
12	551.1	554.4	551.2	555.3	553.0	556.0	.....	557.6	554.8	551.7	551.5	552.0
13	551.1	553.9	550.6	554.9	553.1	556.0	.....	557.5	554.6	551.7	551.6	552.0
14	551.0	553.8	550.8	554.4	553.1	556.7	.....	557.4	554.3	551.7	551.5	552.1
15	551.0	553.5	551.6	554.0	553.1	557.6	.....	556.9	554.2	551.8	551.5	552.1
16	551.0	553.0	551.4	553.7	553.0	558.3	.....	556.7	554.1	552.2	551.4	552.1
17	551.0	552.8	551.4	553.2	552.9	559.2	.....	556.5	553.9	552.0	551.0	552.2
18	551.0	551.6	551.6	553.1	553.0	559.2	.....	556.5	553.7	552.1	550.3	552.4
19	551.0	551.3	551.4	552.9	553.0	559.3	.....	556.5	553.6	552.0	549.4	552.5
20	551.0	551.3	551.3	552.9	552.9	560.9	.....	556.4	553.5	551.8	549.0	552.4
21	551.0	550.9	550.2	553.2	552.7	561.2	.....	556.2	553.4	551.7	550.7	552.3
22	550.8	550.7	551.8	554.9	552.7	561.1	.....	556.0	553.3	551.7	550.6	552.3
23	550.8	550.9	552.9	554.7	552.9	560.6	.....	555.9	553.1	551.5	550.5	552.4
24	550.6	551.4	552.8	554.6	553.5	560.2	.....	555.7	553.0	551.4	550.5	552.5
25	550.6	551.8	552.1	553.8	553.9	560.2	.....	555.6	552.9	551.4	550.4	552.6
26	550.4	551.8	551.9	553.8	554.6	560.4	.....	555.6	552.8	551.4	550.3	552.6
27	549.7	551.7	552.2	553.3	555.0	560.3	.....	555.7	552.6	551.4	550.1	552.8
28	549.7	551.8	551.7	552.8	554.9	560.7	.....	555.9	552.5	551.4	550.0	553.0
29	549.9	552.2	551.4	553.0	554.2	561.2	.....	555.8	552.4	551.3	550.3	553.2
30	550.5	.....	.....	553.1	.....	561.7	.....	555.6	552.4	551.3	550.6	553.2
31	550.6	.....	552.2	.....	.....	.....	.....	555.7	.....	551.2	.....	553.2

Missouri River.—Omaha, Neb., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	553.2	553.6	554.2	558.7	558.4	557.6	558.3	554.1	551.5	551.3	551.8	549.9
2	553.1	553.6	554.0	560.1	558.1	557.4	557.8	553.9	551.4	551.2	551.8	549.7
3	553.1	553.5	553.9	563.2	557.9	557.3	557.0	553.8	551.4	551.2	551.8	549.7
4	553.0	553.6	554.0	563.4	557.8	557.2	556.2	553.7	551.5	551.2	551.8	549.9
5	553.0	553.7	554.1	563.0	557.2	556.8	555.7	553.5	551.6	551.1	551.9	550.0
6	552.9	553.8	554.1	563.4	556.7	556.3	555.2	553.2	551.6	551.1	552.0	550.2
7	552.8	554.0	554.1	563.8	556.6	556.2	555.2	553.2	551.5	551.2	552.1	550.2
8	552.8	554.1	554.2	565.5	556.3	556.3	555.5	553.1	551.9	551.2	552.0	550.3
9	552.8	554.2	554.2	567.5	556.1	556.4	555.8	553.0	552.1	551.2	551.9	550.3
10	552.9	554.2	554.5	567.2	556.0	556.3	556.1	553.0	552.1	551.3	551.8	550.2
11	552.9	554.1	554.7	565.7	555.7	556.5	556.3	552.9	551.9	551.5	551.7	550.2
12	552.8	554.0	554.9	564.3	555.5	556.8	556.3	552.9	531.8	551.4	551.7	550.1
13	552.8	554.0	555.1	562.8	555.3	557.5	556.4	552.7	551.8	551.2	551.6	550.2
14	552.8	554.1	555.7	561.5	555.0	559.1	556.5	552.5	551.9	551.1	551.5	550.3
15	552.9	554.2	557.1	561.0	554.6	559.9	556.5	552.5	551.8	551.1	551.5	550.3
16	552.9	554.2	557.9	560.7	554.4	559.5	556.1	552.5	551.8	551.1	551.5	550.2
17	553.1	554.3	557.6	560.9	554.2	558.6	555.7	552.4	551.9	551.2	551.4	550.3
18	553.1	554.3	557.6	562.2	554.0	558.4	555.4	552.2	551.9	551.2	551.3	550.4
19	553.2	554.4	557.6	563.9	554.9	557.9	555.2	552.1	551.8	551.2	551.2	550.7
20	553.3	554.3	557.4	565.9	555.8	557.4	555.0	551.9	551.7	551.2	550.6	550.7
21	553.4	554.2	557.4	567.1	556.3	556.9	554.8	551.8	551.5	551.3	550.1	550.8
22	553.5	554.3	557.5	568.4	555.8	556.5	554.6	551.7	551.4	551.4	550.1	550.8
23	553.5	554.3	557.4	569.0	555.1	556.4	554.5	551.5	551.4	551.4	550.0	550.8
24	553.6	554.4	557.4	569.4	554.9	556.2	554.4	551.5	551.5	551.5	550.0	550.8
25	553.6	554.4	557.7	569.4	554.5	556.4	554.5	551.6	551.5	551.6	549.6	550.7
26	553.7	554.5	560.1	569.0	554.3	557.6	554.6	551.6	551.4	551.6	549.6	550.7
27	553.7	554.4	562.4	568.7	554.2	558.0	554.4	551.6	551.3	551.6	550.1	550.8
28	553.7	554.4	559.6	566.3	554.4	557.7	554.3	551.6	551.2	551.7	550.0	550.8
29	553.8		559.1	564.1	556.0	558.3	554.2	551.6	551.3	551.7	550.0	550.7
30	553.8		560.1	560.3	557.1	558.8	554.2	551.5	551.2	551.7	550.0	550.5
31	553.7		560.1		557.5		554.2	551.5		551.7		550.3

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	549.8	551.0	550.9	551.5	553.6	554.2	559.6	554.3	552.2	550.7	550.9	549.0
2	.....	551.1	550.6	551.3	553.4	554.0	559.4	554.3	552.2	550.8	550.8	548.8
3	551.2	551.1	551.2	551.2	553.2	553.9	559.3	554.2	552.0	550.8	550.8	548.6
4	551.5	551.2	551.5	551.3	553.0	553.7	559.1	554.1	551.9	550.8	550.8	548.6
5	551.9	551.3	551.9	551.4	552.9	553.6	558.6	554.1	551.8	550.8	550.8	548.6
6	552.5	551.5	551.8	551.5	552.8	553.5	558.1	554.1	551.7	550.9	550.8	548.4
7	552.8	551.6	551.4	551.5	552.8	553.5	557.8	554.2	551.7	550.9	550.8	.....
8	.....	551.7	550.5	551.7	552.9	553.4	557.8	554.2	551.6	550.9	550.7	549.4
9	552.6	551.9	550.6	552.0	552.9	553.4	557.7	554.1	551.6	551.0	550.7	549.3
10	552.8	552.0	550.3	553.5	552.8	553.5	557.4	554.0	551.5	551.3	550.7	550.0
11	553.1	551.6	550.4	557.4	553.1	554.2	557.3	553.8	551.3	551.6	550.8	550.4
12	553.2	551.0	550.3	556.9	553.2	555.5	557.6	553.6	551.2	551.5	550.7	550.7
13	553.1	550.2	550.2	555.8	553.6	555.7	557.9	553.4	551.2	551.3	550.7	550.8
14	552.8	550.1	550.1	555.3	555.1	555.6	558.0	553.3	551.1	551.3	550.7	550.7
15	552.8	550.1	550.5	554.9	555.1	555.5	558.1	553.2	551.1	551.3	550.6	550.5
16	552.8	550.2	551.3	554.6	554.8	555.8	558.1	553.0	551.0	551.2	550.6	550.3
17	552.2	550.1	551.6	554.2	554.6	557.0	558.0	552.9	551.0	551.1	550.5	550.2
18	551.9	550.2	551.4	554.0	554.3	558.3	557.9	552.9	551.0	551.2	550.5	550.2
19	552.1	550.1	551.0	553.8	554.3	558.8	557.0	552.8	551.0	551.2	550.5	550.2
20	552.0	550.1	550.8	553.7	555.5	559.1	556.7	552.7	550.9	551.2	550.5	550.4
21	552.0	551.0	550.6	553.6	555.2	559.2	556.2	552.6	550.9	551.3	550.4	550.5
22	551.8	550.7	550.5	553.3	554.9	559.4	555.9	552.5	550.8	551.3	550.3	550.5
23	551.5	551.5	550.7	553.2	554.7	559.7	555.6	552.4	550.8	551.4	550.1	550.6
24	551.4	552.0	550.7	553.1	554.6	559.7	555.3	552.4	550.8	551.4	.....	550.6
25	551.4	552.2	550.7	552.9	554.5	559.8	555.0	552.4	550.8	551.5	549.8	550.7
26	551.6	552.5	550.6	552.8	554.4	559.8	554.9	552.4	550.8	551.4	549.7	550.9
27	551.5	552.9	550.5	552.7	554.6	559.8	555.0	552.4	550.8	551.3	549.6	551.1
28	551.3	551.2	550.4	552.6	554.9	560.2	554.8	552.5	550.8	551.1	549.5	551.3
29	551.0		550.4	553.0	555.0	560.0	554.7	552.4	550.8	551.0	549.4	551.5
30	550.9		550.7	553.6	554.8	559.8	554.7	552.3	550.8	551.0	549.3	551.6
31	551.0		551.3		554.5		554.4	552.2		551.0		551.7

Missouri River.—Omaha, Neb., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	551.7	550.8	551.5	554.1	553.3	556.1	559.2	555.0	553.1	551.3	550.8	548.9
2	551.7	550.7	551.7	554.0	553.1	556.7	558.9	555.1	553.0	551.2	550.8	548.8
3	551.7	550.6	551.9	554.0	552.9	557.0	558.7	555.0	552.8	551.2	550.8	548.7
4	551.6	550.7	552.2	554.1	552.8	557.2	558.6	554.7	552.7	551.2	550.8	548.7
5	551.5	550.7	552.5	554.2	552.8	557.0	558.6	554.2	552.7	551.2	550.8	548.8
6	551.4	550.6	552.7	554.0	552.8	556.8	558.8	553.9	552.6	551.1	550.8	548.8
7	551.2	550.6	553.1	553.8	552.7	556.7	558.9	553.8	552.5	551.1	550.8	549.0
8	551.1	550.6	554.0	553.6	552.8	556.5	559.2	553.9	552.3	551.1	550.8	549.2
9	551.0	550.6	555.7	553.5	552.8	556.2	559.6	553.8	552.3	551.0	550.8	549.3
10	550.9	550.7	552.6	553.4	552.9	555.9	559.7	553.6	552.2	551.0	550.8	549.4
11	550.8	550.7	552.1	553.2	553.4	555.8	559.8	553.5	552.1	551.0	550.6	549.5
12	550.8	550.8	552.2	553.6	554.0	555.5	559.6	553.6	531.9	550.9	550.5	549.7
13	550.8	550.8	552.3	554.1	554.2	555.3	559.2	553.5	552.0	550.9	550.5	549.9
14	550.7	551.6	553.0	554.2	554.2	555.4	558.9	553.4	551.9	550.8	550.4	550.0
15	550.8	551.7	552.4	554.6	556.0	555.6	558.2	553.5	551.8	550.8	550.4	550.2
16	550.8	551.7	552.7	556.5	556.5	555.6	557.8	553.7	551.8	550.7	550.2	550.2
17	550.9	551.6	553.1	556.9	557.6	555.8	557.5	554.2	551.7	551.0	550.2	549.5
18	550.9	551.7	553.1	558.8	557.7	555.9	557.0	554.6	551.7	550.9	549.7	549.0
19	550.9	551.8	553.2	558.7	556.9	556.3	556.9	554.1	551.6	550.8	549.8	548.8
20	551.0	551.8	552.5	557.0	556.3	556.9	556.6	553.8	551.6	550.7	550.1	548.5
21	550.8	551.7	552.2	555.8	556.0	557.4	556.4	553.7	551.6	550.7	550.4	548.9
22	550.8	551.7	552.0	555.1	555.6	557.8	556.2	553.7	551.6	550.8	550.2	549.2
23	551.1	551.6	551.7	554.6	556.1	558.2	556.2	553.6	551.7	550.8	550.1	549.2
24	551.0	551.4	553.1	554.2	559.1	558.1	555.9	553.6	551.7	550.8	549.9	549.9
25	551.1	551.1	555.7	554.0	559.5	558.1	555.8	553.5	551.6	550.8	549.7	549.9
26	551.2	551.1	555.4	554.0	558.6	558.6	555.8	553.4	551.5	550.8	549.6	549.6
27	551.3	551.4	555.0	553.7	557.6	559.3	555.5	553.3	551.5	550.9	549.5	549.9
28	551.2	551.5	554.6	553.5	557.2	559.7	555.3	553.3	551.4	550.9	549.4	550.5
29	551.1	551.1	554.2	553.5	556.9	559.6	555.2	553.2	551.4	551.0	549.2	550.7
30	551.0	551.0	553.9	553.4	556.6	559.4	555.0	553.2	551.4	550.9	548.7	551.6
31	550.9	553.8	553.8	553.4	556.3	554.9	554.9	553.1	551.4	550.9	550.9	551.7

Missouri River.—Omaha, Neb., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	551.7	551.3	552.2	556.4	553.6	555.0	557.8	554.6	553.1	553.2	552.5	550.5
2	551.8	551.3	552.3	557.0	553.5	555.4	558.4	554.4	553.1	553.2	552.4	550.7
3	551.9	551.4	552.5	558.0	553.7	555.7	558.8	554.1	553.0	553.4	552.5	550.8
4	552.0	551.4	552.7	560.1	553.9	555.8	558.7	554.0	552.8	553.6	552.5	551.2
5	552.1	551.3	552.9	561.7	554.0	555.9	558.6	553.8	552.8	553.5	552.5	551.3
6	552.3	551.3	553.0	562.6	554.3	555.8	558.0	553.8	553.0	553.5	552.5	551.4
7	552.6	551.2	553.1	562.5	554.2	557.0	557.7	553.6	553.0	553.4	552.5	551.5
8	552.8	551.2	553.2	561.7	554.1	557.3	557.5	553.4	552.8	553.3	552.5	551.5
9	552.9	551.1	553.5	560.0	554.0	557.4	557.2	553.3	552.8	553.2	552.4	551.4
10	553.0	551.1	554.0	558.5	553.3	557.5	557.0	553.1	553.2	553.2	552.4	551.3
11	553.0	551.2	554.5	557.6	553.5	557.5	556.7	553.0	553.2	553.2	552.4	551.0
12	553.1	551.3	555.0	556.5	553.4	557.4	556.5	552.9	553.2	553.1	552.4	551.0
13	553.1	551.4	555.7	556.1	553.1	557.5	556.2	553.0	553.1	553.0	552.3	550.3
14	553.0	551.5	555.9	555.6	553.1	557.9	556.0	552.9	553.2	552.8	552.2	550.0
15	552.8	551.7	555.6	555.1	553.1	558.5	555.8	552.9	553.3	552.8	552.2	549.8
16	552.8	551.9	555.4	554.8	553.2	559.2	555.7	553.0	553.2	552.8	552.1	549.8
17	552.7	552.0	555.4	554.6	553.2	559.5	555.4	553.0	553.2	552.7	552.1	551.9
18	552.9	551.9	555.4	554.2	553.0	559.5	555.2	552.9	553.1	552.6	552.1	551.9
19	552.5	551.9	554.2	553.9	552.9	559.4	555.0	552.9	553.1	552.6	552.1	551.9
20	552.2	551.8	552.7	553.8	552.8	559.6	555.0	553.0	553.0	552.6	552.1	551.9
21	552.1	551.9	552.6	553.7	552.6	560.1	555.1	553.0	552.9	552.6	552.1	551.9
22	552.0	551.9	553.0	553.5	552.5	560.2	555.0	552.9	552.9	552.6	552.0	551.9
23	551.8	551.9	557.0	553.4	552.5	560.0	554.9	552.9	553.0	552.5	551.7	551.9
24	551.6	551.8	560.7	553.3	552.5	559.5	554.9	552.9	553.0	552.5	551.5	551.9
25	551.6	551.9	557.3	553.2	552.7	559.0	554.7	553.1	553.0	552.5	551.5	551.9
26	551.6	551.9	555.7	553.0	552.8	558.7	554.6	553.2	552.9	552.6	551.2	552.0
27	551.6	552.0	555.5	553.1	552.9	558.3	554.7	553.3	553.1	552.6	551.2	552.1
28	551.5	552.1	555.7	553.1	553.9	557.9	554.9	553.4	553.2	552.6	551.3	552.2
29	551.5	552.1	555.6	553.5	554.3	557.6	555.1	553.4	553.2	552.6	551.2	552.3
30	551.4	551.4	555.8	553.7	554.5	557.5	555.2	553.4	553.3	552.6	550.3	552.4
31	551.4	551.4	556.1	553.7	554.6	557.5	554.9	553.3	553.3	552.5	550.3	553.3

Missouri River.—Omaha, Neb., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	552.77	551.42	552.32	554.20	553.77	554.45	558.02	555.72	553.22	551.77	551.50	551.25
2	552.85	551.45	552.52	554.12	553.47	554.32	557.92	555.53	553.17	551.67	551.53	551.25
3	552.82	551.50	552.80	553.95	553.33	554.25	557.87	555.37	553.07	551.65	551.43	551.30
4	552.82	551.57	553.02	554.02	553.32	554.75	557.92	555.15	553.02	551.60	551.32	551.28
5	552.80	551.72	553.42	554.22	553.45	554.88	558.07	555.05	552.92	551.55	551.30	551.15
6	552.62	551.97	553.80	554.18	553.30	554.92	557.95	555.12	552.75	551.55	551.25	551.00
7	552.50	551.12	554.27	554.35	553.02	554.85	557.77	555.17	552.62	551.50	551.32	550.05
8	552.33	552.23	555.37	554.17	552.80	554.80	557.72	555.15	552.57	551.50	551.43	548.62
9	552.23	552.22	556.10	553.78	552.70	557.60	557.65	555.20	552.55	551.45	551.55	548.65
10	552.12	552.27	556.40	553.95	552.58	559.22	557.48	555.15	552.53	551.47	551.55	550.50
11	552.05	552.33	554.10	554.27	552.50	559.42	557.35	555.05	552.58	551.52	551.67	551.10
12	552.10	552.40	554.70	554.38	552.35	559.27	557.30	554.85	552.62	551.62	551.67	551.07
13	552.15	552.43	554.47	555.42	552.27	559.40	557.22	554.70	552.60	551.70	551.58	550.97
14	552.10	552.37	554.37	555.57	552.20	560.15	557.07	554.47	552.57	551.67	551.47	551.17
15	552.02	552.32	554.37	555.25	552.23	560.50	556.90	554.20	552.67	551.65	551.53	551.30
16	551.92	552.25	554.05	554.80	552.20	560.85	556.70	553.97	552.72	551.70	551.55	551.42
17	551.93	552.17	554.27	554.15	552.42	561.05	556.55	553.87	552.78	551.73	551.50	551.33
18	552.02	552.10	553.95	553.37	552.52	560.35	556.37	553.90	552.73	551.75	551.47	551.22
19	552.05	552.05	553.42	552.85	552.40	559.75	556.27	553.85	552.65	551.68	551.50	551.17
20	551.98	552.02	553.20	552.67	552.40	559.50	556.15	553.87	552.58	551.52	551.45	551.15
21	551.80	551.87	553.02	552.67	552.47	559.53	556.15	553.87	552.50	551.47	551.50	551.05
22	551.63	551.82	552.85	552.85	553.77	559.45	556.20	553.82	552.47	551.47	551.50	551.00
23	551.52	551.85	553.87	552.95	553.80	559.30	556.22	553.80	552.42	551.50	551.47	551.02
24	551.45	551.90	554.70	553.03	553.75	559.12	556.22	553.72	552.38	551.47	551.45	551.07
25	551.27	551.93	554.10	553.15	553.57	559.07	556.23	553.65	552.25	551.45	551.37	551.12
26	551.25	551.92	553.80	553.35	553.45	558.90	556.20	553.57	552.17	551.45	551.30	551.05
27	551.22	551.98	553.97	553.55	553.52	558.67	556.15	553.42	552.08	551.47	551.30	551.02
28	551.27	552.02	553.90	553.70	553.52	558.40	556.12	553.35	552.00	551.53	551.25	551.50
29	551.35		553.72	553.72	553.60	558.15	556.02	553.37	551.92	551.55	551.25	551.52
30	551.42		553.75	553.95	553.97	557.97	556.17	553.33	551.87	551.50	551.27	550.97
31	551.48		554.17		554.37		556.10	553.30		551.50		550.93

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1									669.4	668.9	668.0	667.8
2									669.3	668.7	668.0	667.8
3									669.3	668.6	667.9	667.8
4									669.3	668.6	667.8	667.8
5									669.3	668.6	667.7	667.7
6									669.6	668.5	667.7	667.7
7									669.7	668.3	667.7	667.6
8									669.6	668.1	667.7	667.5
9									669.3	668.3	667.8	667.4
10									669.3	668.2	667.8	667.5
11									669.3	668.2	667.9	667.5
12									669.3	668.1	668.0	667.4
13									669.3	668.1	668.1	666.1
14									669.3	668.0	668.1	665.8
15									669.0	668.1	668.1	665.5
16									669.1	668.0	667.7	665.2
17									668.6	667.9	667.9	665.0
18									668.6	668.0	667.8	667.2
19									668.6	668.0	667.8	666.9
20									668.7	668.0	667.8	667.2
21									669.0	667.9	667.8	667.5
22									669.0	667.8	667.9	666.3
23									669.0	667.8	667.9	666.5
24									669.0	667.8	667.9	666.5
25									668.9	667.8	667.9	666.3
26									668.9	667.8	667.9	666.1
27									668.9	667.8	667.9	665.8
28									668.9	668.0	667.9	665.6
29									668.9	668.0	667.9	665.5
30									668.9	668.0	667.9	665.4
31									668.9	668.0	667.9	665.4

Missouri River.—Sioux City, Ia., 1879.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	665.5	667.6	668.2	671.8	672.5	674.9	677.4	673.5	668.7	667.5	667.4	665.7
2	665.6	667.6	668.2	671.5	672.3	675.2	677.4	672.8	668.7	667.4	667.3	665.6
3	665.8	667.6	668.2	673.7	672.5	674.9	677.4	672.4	668.6	667.3	667.5	665.5
4	665.9	667.6	668.2	675.6	672.5	674.7	677.0	671.9	668.5	667.3	667.7	665.5
5	666.0	667.6	668.2	677.5	672.2	675.3	676.4	671.5	668.4	667.2	667.8	665.3
6	666.1	667.6	668.2	678.5	672.0	675.5	675.9	671.1	668.4	667.1	667.8	665.4
7	666.3	667.6	668.3	679.0	671.8	675.2	675.9	671.0	668.4	667.1	667.7	665.7
8	666.6	667.6	668.1	678.9	671.7	674.9	675.6	670.8	668.4	667.1	667.6	667.1
9	666.8	667.6	667.8	677.3	671.6	674.5	675.7	670.6	668.3	667.1	667.5	667.5
10	667.0	667.6	668.4	675.0	671.3	674.3	675.9	670.5	668.2	667.1	667.3	666.4
11	667.0	667.6	668.0	673.8	671.1	674.1	675.5	670.3	668.0	667.1	667.2	666.0
12	667.0	667.6	668.0	673.0	670.9	674.0	675.2	670.3	668.0	667.1	667.3	666.3
13	667.0	667.6	667.9	672.7	670.8	674.0	675.0	670.3	667.9	667.2	667.2	666.4
14	667.0	667.6	667.7	672.3	671.3	675.6	674.8	670.2	667.9	667.2	667.2	666.3
15	667.0	667.6	667.7	672.0	671.8	676.7	674.7	670.1	667.8	667.2	667.2	666.2
16	667.0	667.6	667.7	671.7	671.8	678.0	674.7	669.9	667.7	667.2	667.2	666.1
17	667.0	667.6	668.0	671.6	671.7	677.2	674.4	669.8	667.6	666.9	667.2	665.9
18	666.9	667.7	667.9	671.6	671.5	676.4	674.2	669.7	667.5	667.0	667.3	665.9
19	666.8	667.7	667.9	671.6	671.5	675.6	674.2	669.6	667.4	667.0	667.3	665.9
20	666.7	667.8	666.0	671.4	671.6	675.3	674.1	669.5	667.4	667.0	667.2	666.1
21	666.8	667.8	667.1	671.3	671.8	677.3	673.9	669.5	667.3	667.0	667.3	666.3
22	666.9	667.9	666.6	671.2	672.3	677.9	673.6	669.4	667.3	667.0	667.3	666.5
23	667.0	667.9	666.5	671.3	672.5	678.3	673.5	669.3	667.3	667.1	667.1	666.8
24	667.0	668.0	670.4	671.3	672.4	677.9	673.1	669.2	667.3	667.1	667.1	667.0
25	667.1	668.1	671.8	671.2	672.3	678.3	672.8	669.3	667.2	667.1	667.1	667.0
26	667.2	668.1	672.0	671.2	672.9	678.6	672.8	669.3	667.3	667.0	667.0	666.7
27	667.4	668.1	672.0	671.1	674.0	678.5	673.1	669.2	667.2	667.1	667.0	666.6
28	667.5	668.2	671.2	671.0	674.1	678.1	673.3	669.2	667.3	667.1	666.8	666.6
29	667.6		670.9	671.7	673.8	677.5	673.4	669.1	667.4	667.1	666.4	666.6
30	667.6		671.5	672.4	673.6	677.3	673.9	669.0	667.4	667.2	665.7	666.5
31	667.6		672.6		674.2		674.0	668.8	667.4	667.3		666.5

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	666.4	666.9	666.3	667.2	669.9	672.0	676.8	673.4	672.0	668.6	668.0	667.5
2	666.4	667.0	666.9	667.5	669.6	671.4	676.7	673.2	672.6	668.6	668.0	667.3
3	666.5	667.1	664.4	669.6	669.4	673.3	676.7	673.2	672.1	668.4	668.0	667.3
4	666.5	667.2	664.8	676.7	669.3	674.2	676.8	673.1	671.0	668.5	668.0	667.4
5	666.6	667.3	664.8	676.2	669.4	673.6	677.1	673.2	670.5	668.5	668.1	667.4
6	666.6	667.5	665.0	673.4	669.4	673.2	677.4	673.1	670.4	668.6	668.1	667.6
7	666.6	667.6	665.8	673.5	669.4	672.8	677.5	673.1	670.5	668.6	668.2	667.6
8	666.6	667.6	666.3	673.1	669.4	672.0	677.5	672.9	670.5	668.5	668.2	667.7
9	666.5	667.6	666.2	672.4	669.4	671.8	677.4	672.6	670.4	668.4	668.2	667.8
10	666.5	667.6	666.2	671.9	669.3	672.1	677.2	672.2	670.2	668.4	668.2	667.8
11	666.5	667.6	665.3	671.3	669.5	672.3	677.2	671.9	670.1	668.2	668.3	667.7
12	666.5	667.6	664.8	670.9	669.6	672.3	677.1	671.6	669.8	668.2	668.3	667.7
13	666.5	667.6	665.3	670.3	669.6	672.3	676.7	671.4	669.7	668.3	668.3	667.6
14	666.5	667.5	666.5	670.0	669.4	673.9	676.8	671.1	669.5	668.3	668.1	667.6
15	666.4	667.6	666.3	669.7	669.2	674.4	677.0	671.0	669.5	668.3	667.9	667.6
16	666.4	667.6	665.9	669.4	669.4	674.6	677.0	671.0	669.4	668.2	667.9	667.7
17	666.5	667.6	665.9	669.2	669.4	674.3	676.9	671.0	669.2	668.3	667.8	667.7
18	666.7	667.6	666.1	669.3	669.3	674.9	677.2	671.1	669.2	668.3	668.0	667.7
19	666.7	667.5	666.5	669.0	669.2	676.3	677.5	671.2	669.0	668.1	669.9	667.7
20	666.7	667.6	667.0	670.5	669.1	676.1	677.5	671.8	669.0	668.0	669.1	667.7
21	666.6	667.6	667.2	671.4	669.1	675.6	676.1	672.2	668.8	667.9	667.9	667.6
22	666.6	667.6	668.0	671.3	669.4	675.0	675.3	671.5	668.7	667.9	668.2	667.6
23	666.6	667.7	667.6	670.7	670.2	674.8	674.7	671.0	668.7	667.9	668.5	667.5
24	666.5	667.7	666.7	670.2	670.7	674.8	674.2	670.8	668.5	667.9	668.0	667.4
25	666.5	666.6	666.9	669.7	671.1	675.0	673.7	670.9	668.4	667.9	668.0	667.4
26	666.4	666.8	666.7	669.3	671.7	675.0	673.6	671.3	668.4	667.9	668.3	667.4
27	666.5	666.5	666.1	669.5	671.3	675.6	673.5	671.4	668.5	667.9	668.3	667.5
28	666.6	666.1	666.3	669.6	670.4	676.5	673.5	671.2	668.5	668.0	668.0	667.5
29	666.8	666.4	667.0	669.8	669.9	677.0	673.4	671.1	668.5	668.1	667.8	667.5
30	666.9		667.3	670.0	669.9	677.0	673.4	671.2	668.6	668.1	667.6	667.4
31	666.9		667.0		671.6		673.5	671.7		668.0		667.4

Missouri River.—Sioux City, Ia., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	667.4	668.1	669.3	681.1	675.6	675.1	674.5	670.3	668.9	667.8	668.4	665.2
2	667.4	668.2	669.3	678.1	674.6	675.1	673.5	670.3	668.9	667.8	668.4	665.2
3	667.5	668.3	669.4	678.5	673.8	675.3	672.4	670.4	668.9	667.8	668.5	665.2
4	667.5	668.3	669.5	678.0	673.5	674.3	672.1	670.7	668.9	667.8	668.6	664.9
5	667.6	668.4	669.6	678.7	673.4	673.7	672.1	670.5	669.0	667.8	668.7	664.6
6	667.6	668.4	669.7	680.2	673.4	673.6	672.5	670.3	669.2	667.9	668.6	664.5
7	667.7	668.5	669.8	683.8	673.2	673.6	672.4	670.2	669.5	667.9	668.3	665.1
8	667.8	668.5	670.0	683.6	672.7	673.4	672.5	670.2	669.2	668.1	668.2	665.2
9	667.8	668.5	670.6	681.2	672.5	673.6	672.8	670.2	668.9	668.0	668.0	665.5
10	667.9	668.5	672.4	679.3	672.1	673.9	673.0	670.1	668.6	668.1	667.8	665.7
11	668.0	668.5	673.7	677.6	671.9	674.2	673.1	670.1	668.7	667.9	667.6	665.9
12	668.0	668.6	674.0	676.6	671.6	675.0	673.2	669.8	668.7	667.8	667.5	666.0
13	668.1	668.6	673.7	676.0	671.4	676.9	673.4	669.7	668.8	667.6	667.5	666.0
14	668.1	668.6	673.5	675.9	671.2	677.9	673.3	669.7	668.9	667.6	667.4	666.0
15	668.2	668.6	673.5	675.2	671.0	677.2	672.7	669.6	668.7	667.6	667.4	665.7
16	668.3	668.7	673.7	675.3	671.0	676.6	672.2	669.3	668.5	667.6	667.4	665.9
17	668.3	668.8	673.7	677.6	671.1	675.8	671.9	669.1	668.5	667.7	667.3	666.2
18	668.4	668.8	673.7	681.4	672.0	675.0	671.7	669.1	668.3	667.8	667.3	666.1
19	668.4	668.9	673.5	682.0	672.9	674.1	671.5	669.0	668.0	667.8	666.2	666.1
20	668.4	668.9	673.4	683.0	673.4	673.8	671.2	669.0	667.8	667.8	665.8	666.1
21	668.4	668.9	673.4	685.0	672.7	673.8	670.6	668.9	667.8	667.9	665.3	666.2
22	668.3	669.0	673.6	685.8	672.1	673.3	670.4	669.0	667.8	668.1	665.4	665.9
23	668.2	669.0	675.6	686.0	671.9	672.7	670.4	668.9	667.8	668.1	665.4	666.0
24	668.1	669.0	678.5	685.6	671.6	673.2	670.7	668.9	667.8	668.0	665.3	665.9
25	668.1	669.0	679.3	685.0	671.4	674.6	670.7	668.9	667.8	668.0	664.8	666.1
26	668.0	669.1	679.8	683.5	671.3	675.4	670.4	669.0	667.7	668.1	664.7	666.1
27	668.0	669.1	680.1	681.1	671.8	675.0	670.4	669.0	667.6	668.0	665.2	665.9
28	667.9	669.2	678.7	679.2	673.7	675.8	670.6	669.0	667.6	668.2	665.4	666.0
29	667.9		677.3	677.5	674.5	676.1	670.5	668.9	668.0	668.2	665.5	665.9
30	668.0		676.5	676.4	675.2	675.4	670.3	668.9	667.8	668.3	665.3	667.5
31	668.1		676.4		675.3		670.3	668.9		668.5		666.8

Missouri River.—Sioux City, Ia., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	666.4	668.0	668.1	667.5	669.6	670.3	675.7	670.4	668.6	666.6	667.1	663.8
2	666.8	668.0	668.8	667.6	669.1	670.2	675.3	670.3	668.6	666.6	667.1	663.9
3	666.9	668.0	667.5	667.8	668.8	670.1	674.8	670.3	668.4	666.6	667.1	663.6
4	666.9	668.1	667.5	667.5	668.6	670.1	674.3	670.3	668.2	666.6	667.1	663.5
5	666.8	668.1	667.7	667.6	668.9	670.0	674.0	670.3	668.2	666.6	667.1	663.8
6	667.2	668.0	667.1	667.8	669.0	670.0	674.1	670.4	668.0	666.7	667.2	663.9
7	667.5	667.8	665.9	667.8	668.9	670.1	674.2	670.5	667.8	666.9	667.0	664.6
8	667.6	667.8	666.0	668.9	669.0	670.0	673.9	670.5	667.7	667.5	667.1	664.5
9	667.8	667.7	665.8	669.7	669.1	670.1	673.8	670.3	667.6	667.9	666.9	664.4
10	667.9	667.5	665.8	674.0	669.5	671.8	674.4	670.1	667.5	667.9	666.9	664.4
11	668.0	667.4	665.7	673.1	669.7	673.0	674.6	670.0	667.5	667.7	666.9	664.3
12	668.1	667.3	665.4	671.8	670.1	673.4	674.7	669.8	667.4	667.7	667.0	664.1
13	668.1	667.3	665.9	671.2	671.6	673.3	674.8	669.7	667.3	667.7	666.8	663.9
14	667.8	667.2	666.9	670.6	671.5	673.3	674.9	669.6	667.3	667.6	666.7	663.9
15	667.7	666.9	667.1	670.2	671.1	673.8	674.9	669.5	667.2	667.5	666.9	664.0
16	667.3	666.8	667.7	670.0	670.5	674.8	674.8	669.4	667.2	667.5	666.8	664.3
17	667.3	666.9	666.7	669.8	670.0	676.0	674.2	669.4	667.1	667.5	666.5	664.7
18	667.3	666.9	666.3	669.7	671.2	676.1	673.9	669.3	667.0	667.6	666.5	664.7
19	667.3	666.3	666.2	669.5	671.8	676.0	673.8	669.2	666.9	667.7	666.3	664.8
20	667.5	666.2	666.1	669.4	671.3	676.0	673.3	669.2	666.9	667.8	666.0	664.9
21	667.6	666.2	666.1	669.0	670.8	676.2	673.0	669.1	666.8	667.9	665.7	665.1
22	667.6	666.3	666.4	668.9	670.4	676.3	672.7	669.0	666.8	668.2	665.5	665.5
23	667.7	666.3	666.4	668.8	670.2	676.3	672.2	669.1	666.7	668.3	665.3	665.7
24	667.9	666.5	666.1	668.8	670.0	676.4	671.9	669.2	666.7	668.2	665.2	666.2
25	667.8	666.8	665.7	668.6	670.1	676.8	671.7	669.1	666.7	668.0	665.1	666.3
26	667.7	667.1	665.7	668.5	670.5	676.8	671.5	669.1	666.6	667.8	665.3	666.5
27	667.8	667.5	665.6	668.6	670.9	676.9	671.4	669.1	666.5	667.7	665.3	666.7
28	667.8	667.7	666.1	669.4	671.3	676.5	671.3	669.0	666.4	667.6	665.2	666.9
29	667.9		667.6	670.2	671.1	676.2	671.2	668.9	666.4	667.5	664.3	666.9
30	667.9		667.8	670.0	670.7	676.0	670.8	668.9	666.5	667.4	663.7	666.9
31	668.0		667.6		670.5		670.6	668.8		667.3		666.9

Missouri River.—Sioux City, Ia., 1883.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	666.9	665.8	667.0	670.2	669.8	672.8	676.1	671.3	668.3	667.0	666.7	664.9
2	666.8	665.8	667.3	669.9	669.5	673.7	675.9	671.2	668.2	666.9	666.8	664.8
3	666.7	665.7	667.5	669.9	669.5	674.1	675.8	671.0	668.0	666.9	666.8	664.5
4	666.5	665.7	668.6	669.6	669.5	673.9	675.8	670.7	667.9	666.8	666.9	664.1
5	666.3	665.7	670.4	669.4	669.5	673.9	676.0	670.4	667.8	666.7	666.9	663.9
6	666.1	665.8	671.8	669.1	669.4	674.0	676.2	670.2	667.8	666.7	666.9	663.8
7	666.1	665.8	671.9	668.9	669.3	673.7	676.5	670.1	667.8	666.7	666.9	663.9
8	666.0	665.9	671.9	668.9	669.1	673.3	676.8	670.0	667.7	666.6	666.9	664.1
9	666.1	666.0	672.0	668.6	670.1	673.3	677.0	669.9	667.6	666.6	666.9	664.2
10	666.0	666.0	671.9	668.9	670.8	673.0	676.9	669.8	667.6	666.5	666.8	664.5
11	666.1	666.1	671.6	669.6	670.6	672.8	676.5	669.7	667.5	666.5	666.7	664.6
12	666.0	666.2	671.5	670.3	670.5	672.7	676.1	669.6	667.4	666.4	666.6	664.7
13	666.1	666.2	671.8	669.8	671.9	672.8	675.5	669.5	667.4	666.3	666.5	664.8
14	666.1	666.3	671.8	669.3	672.8	673.1	674.9	669.3	667.3	666.4	666.3	664.9
15	666.1	666.3	670.5	672.9	673.0	673.1	674.4	669.5	667.2	666.4	666.6	664.7
16	666.2	666.3	669.9	672.8	674.2	673.4	674.0	669.6	667.1	666.4	664.8	664.5
17	666.3	666.3	669.6	675.9	674.7	673.5	673.7	669.7	667.2	666.5	665.4	664.4
18	666.3	666.3	669.1	675.4	673.1	673.7	673.5	669.9	667.3	666.4	665.4	664.3
19	666.4	666.2	668.3	672.1	672.7	674.1	673.0	669.9	667.4	666.4	665.4	664.2
20	666.5	666.1	667.9	671.9	672.5	674.4	672.9	669.6	667.5	666.4	665.5	664.2
21	666.5	666.1	667.7	671.5	672.1	675.0	672.7	669.5	667.4	666.3	665.6	664.1
22	666.5	666.1	667.6	671.7	672.0	674.8	672.8	669.4	667.3	666.3	665.7	664.0
23	666.5	666.3	671.4	670.6	675.8	674.7	672.6	669.3	667.3	666.4	665.8	664.1
24	666.4	666.4	672.6	670.5	676.2	675.2	672.5	669.3	667.2	666.5	665.7	664.2
25	666.3	666.6	672.0	670.9	675.0	676.7	672.4	669.3	667.2	666.7	665.7	664.4
26	666.3	666.6	671.0	670.3	674.2	676.6	672.3	668.9	667.2	666.9	665.7	664.5
27	666.2	666.7	670.4	670.1	673.8	676.6	672.1	668.7	667.2	667.0	665.6	664.6
28	666.1	666.8	669.8	670.1	673.7	676.3	671.9	668.5	667.2	666.9	665.2	664.7
29	666.1		669.5	670.0	673.1	676.1	671.7	668.5	667.1	666.9	665.0	664.7
30	666.0		669.9	670.0	672.7	676.1	671.4	668.5	667.0	666.9	665.0	664.8
31	665.9		670.2		672.7		671.5	668.4		666.7		664.9

Missouri River.—Sioux City, Ia., 1884.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	665.1	668.3	667.9	672.6	671.2	673.5	676.6	672.7	668.7	669.0	668.3	668.7
2	665.2	668.1	668.0	673.1	671.3	673.4	676.4	672.5	668.6	669.1	668.3	668.6
3	665.3	667.9	668.3	677.7	671.4	673.4	676.2	672.4	668.5	669.0	668.3	668.5
4	665.4	667.9	668.7	679.4	671.5	673.4	676.1	672.2	668.4	669.0	668.4	668.6
5	665.5	667.9	669.1	679.1	671.5	673.6	675.9	672.0	668.4	669.0	668.4	668.6
6	665.7	668.0	669.5	678.3	671.5	674.2	675.8	671.9	668.3	669.0	668.4	668.6
7	666.3	668.1	669.8	677.1	671.3	674.7	675.6	671.6	668.3	668.9	668.5	668.5
8	666.9	668.2	670.1	675.8	671.1	675.0	675.4	671.5	668.5	668.9	668.5	668.4
9	667.4	668.3	670.4	674.8	670.9	674.9	674.9	671.2	668.6	668.8	668.4	668.3
10	668.2	668.5	670.5	673.8	670.6	674.9	674.7	671.0	668.6	668.8	668.5	668.1
11	668.7	668.5	670.6	673.4	670.5	674.9	674.5	670.8	668.8	668.7	668.5	668.0
12	669.9	668.3	670.7	673.0	670.3	675.2	674.3	670.6	668.8	668.6	668.6	667.5
13	669.9	668.2	670.8	672.8	670.4	675.6	674.0	670.5	668.9	668.6	668.6	666.9
14	669.8	667.9	671.0	672.5	670.4	676.2	673.9	670.4	669.0	668.6	668.6	666.5
15	669.7	667.7	671.3	672.3	670.5	676.2	673.8	670.3	668.9	668.5	668.7	666.9
16	669.7	667.5	671.3	672.0	670.5	676.9	673.7	670.2	668.8	668.5	668.8	667.1
17	669.7	667.4	671.4	671.7	670.4	677.4	673.5	670.1	668.7	668.6	668.6	667.5
18	669.6	667.3	671.5	671.2	670.4	677.7	673.4	670.0	668.5	668.7	668.5	667.9
19	669.5	667.2	671.7	670.9	670.5	677.9	673.3	669.9	668.4	668.8	668.5	668.2
20	669.4	667.2	671.9	671.0	670.4	678.4	673.3	669.8	668.3	668.7	668.3	668.6
21	669.4	667.2	673.0	670.8	670.4	678.8	673.5	669.7	668.2	668.6	667.7	668.8
22	669.3	667.3	677.8	670.6	670.3	678.7	673.1	669.5	668.1	668.5	667.5	669.0
23	669.3	667.4	676.0	670.5	670.3	678.3	673.2	669.3	668.0	668.5	667.3	669.2
24	669.2	667.5	675.4	670.4	670.4	678.0	673.3	669.2	668.3	668.4	667.4	669.7
25	669.0	667.6	675.0	670.3	670.6	677.7	673.4	669.1	668.7	668.3	667.7	670.0
26	668.9	667.7	674.7	670.4	670.9	677.5	673.5	669.0	668.8	668.4	667.9	670.4
27	668.8	667.7	673.0	670.5	671.3	677.3	673.4	668.9	668.8	668.4	668.0	670.7
28	668.7	667.7	672.8	670.6	671.8	677.1	673.2	668.9	668.9	668.3	668.4	670.8
29	668.6	667.8	672.3	670.7	672.6	676.9	673.1	668.9	668.9	668.2	668.5	670.9
30	668.5		672.3	670.9	673.2	676.8	673.0	668.8	669.0	668.2	668.6	670.8
31	668.4		672.4		673.5		672.8	668.7		668.3		670.8

Missouri River.—Sioux City, Ia., 1885.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	670.77	670.05	671.40	672.40	671.50	672.32	675.45	673.05	670.17	669.32	668.83	668.60
2	670.72	670.20	672.15	672.42	671.45	672.52	675.37	672.75	670.17	669.20	668.80	668.68
3	670.70	670.32	672.75	672.50	671.70	672.95	675.57	672.58	670.05	669.12	668.82	668.70
4	670.65	670.45	673.70	672.65	671.65	672.70	675.72	672.47	669.90	669.12	668.80	668.70
5	670.55	670.57	674.67	672.55	671.42	672.52	675.62	672.55	669.82	669.15	668.80	668.68
6	670.40	670.62	674.95	672.43	671.20	672.62	675.45	672.70	669.80	669.12	668.85	668.97
7	670.30	670.67	675.10	672.25	671.02	672.75	675.22	672.57	669.85	669.12	668.92	669.82
8	670.15	670.75	675.15	672.35	670.90	675.80	675.10	672.65	669.92	669.05	669.02	669.60
9	670.05	670.85	675.40	672.80	670.80	676.40	675.07	672.60	670.07	669.10	669.07	669.47
10	669.95	670.97	675.80	673.10	670.72	676.42	675.07	672.52	670.12	669.12	669.00	669.25
11	669.90	671.10	676.05	673.42	670.67	676.25	675.07	672.35	670.17	669.17	668.92	668.85
12	669.82	671.00	676.20	673.75	670.65	676.45	674.98	672.10	670.15	669.12	668.85	668.82
13	669.75	670.95	676.45	673.80	670.60	676.67	674.85	671.72	670.40	669.12	668.85	668.65
14	669.70	670.87	672.55	673.50	670.52	678.15	674.50	671.45	670.75	669.17	668.80	668.52
15	669.67	670.82	672.52	673.00	670.57	678.67	674.25	671.27	670.67	669.22	668.80	668.50
16	669.55	670.80	672.77	672.15	670.70	678.15	674.05	671.22	670.55	669.15	668.80	668.50
17	669.45	670.75	671.30	671.15	670.67	676.98	673.97	671.32	670.27	669.10	668.75	668.50
18	669.35	670.80	671.12	670.50	670.60	676.30	673.75	671.30	670.10	669.07	668.78	668.62
19	669.40	670.72	670.72	670.37	670.75	676.32	673.70	671.28	670.07	669.02	668.95	668.72
20	669.40	670.70	670.77	670.42	671.30	676.23	673.67	671.17	670.02	669.00	668.97	668.78
21	669.35	670.62	670.82	670.55	672.20	676.12	673.67	671.02	669.95	669.00	668.90	668.85
22	669.30	670.60	674.10	670.87	672.15	675.87	673.83	670.85	669.85	669.00	668.87	668.87
23	669.27	670.67	674.70	671.12	671.97	675.87	673.90	670.72	669.70	668.95	668.80	668.95
24	669.27	670.75	673.30	671.42	671.75	675.93	673.93	670.63	669.47	668.92	668.77	669.05
25	669.32	670.80	672.35	671.72	671.70	675.87	673.97	670.45	669.42	668.90	668.70	669.33
26	669.35	670.87	672.10	672.02	671.62	675.70	673.87	670.33	669.47	668.90	668.70	669.60
27	669.43	670.92	671.92	672.02	671.65	675.45	673.72	670.22	669.57	668.85	668.65	669.57
28	669.50	671.05	671.90	672.02	671.87	675.37	673.57	670.12	669.47	668.80	668.70	669.50
29	669.65		672.00	671.77	672.37	675.43	673.48	670.07	669.37	668.82	668.67	669.65
30	669.75		672.12	671.57	672.60	675.82	673.40	670.03	669.20	668.87	668.65	670.17
31	669.95		672.30		672.45		673.28	670.07		668.80		670.10

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1						726.4	728.9	.....	.....	.....	.....	.....
2						726.5	728.9	.....	.....	.....	.....	.....
3						726.1	728.9	.....	.....	.....	.....	.....
4						726.3	728.6	.....	.....	.....	.....	.....
5						727.1	728.1	.....	.....	.....	.....	.....
6						726.9	727.5	.....	.....	.....	.....	.....
7						726.5	727.4	.....	.....	.....	.....	.....
8						726.1	727.5	.....	.....	.....	.....	.....
9						725.9	727.6	.....	.....	.....	.....	.....
10						725.6	727.4	.....	.....	.....	.....	.....
11						725.5	726.9	.....	.....	.....	.....	.....
12						725.3	726.7	.....	.....	.....	.....	.....
13						725.7	726.4	.....	.....	.....	.....	.....
14						728.1	726.2	.....	.....	.....	.....	.....
15							726.4	.....	.....	.....	.....	.....
16						728.7	726.3	.....	.....	.....	.....	.....
17						728.0	726.1	.....	.....	.....	.....	.....
18						727.3	726.1	.....	.....	.....	.....	.....
19					723.2	726.6	726.1	.....	.....	.....	.....	.....
20					723.5	727.3	.....	.....	.....	.....	.....	.....
21					723.9	729.0	.....	.....	.....	.....	.....	.....
22					724.0	729.2	.....	.....	.....	.....	.....	.....
23					723.8	728.9	.....	.....	.....	.....	.....	.....
24					723.8	728.7	.....	.....	.....	.....	.....	.....
25					724.1	728.7	.....	.....	.....	.....	.....	.....
26					725.2	729.7	.....	.....	.....	.....	.....	.....
27					725.6	729.6	.....	.....	.....	.....	.....	.....
28					725.4	729.1	.....	.....	.....	.....	.....	.....
29					725.0	728.7	.....	.....	.....	.....	.....	.....
30					724.7	728.7	.....	.....	.....	.....	.....	.....
31					725.0	728.7	.....	.....	.....	.....	.....	.....

Missouri River.—Vermillion, Dak., 1880.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1										719.5	718.9	718.3
2										719.5	718.9	718.5
3										719.4	718.9	719.1
4										719.4	718.9	719.1
5										719.4	718.9	719.2
6										719.3	719.0	719.5
7										719.3	719.0	719.6
8										719.3	719.0	719.8
9										719.2	719.0	719.8
10										719.2	719.1	719.7
11										719.2	719.1	719.5
12										719.2	719.1	719.4
13										719.2	719.0	719.4
14										719.3	719.0	719.5
15										719.4	719.0	719.4
16										719.6	719.0	719.4
17										719.4	719.2	719.4
18										719.2	719.1	719.4
19										719.0	718.5	719.4
20										719.0	718.7	719.3
21										719.0	718.7	719.3
22										719.0	718.0	719.2
23										719.0	718.1	719.2
24										719.0	718.5	719.2
25										718.9	718.6	719.2
26										718.9	718.6	719.2
27										718.8	718.3	719.2
28										718.9	718.4	719.3
29										718.9	718.4	719.4
30										718.9	718.3	719.5
31										719.0	718.3	719.5

Missouri River.—Vermillion, Dak., 1881.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	719.5	720.0	721.0	.....	719.8	722.0	721.8	718.9	715.7	714.1	714.4	713.2
2	719.6	720.0	721.1	.....	719.6	722.3	721.1	719.0	716.5	714.1	714.4	713.2
3	719.5	720.1	721.2	.....	719.5	722.3	720.6	719.1	716.5	714.0	714.5	713.0
4	719.5	720.0	721.2	.....	719.6	721.6	720.3	719.0	716.6	714.0	714.5	712.7
5	719.5	720.0	721.4	.....	719.7	721.3	720.1	719.2	716.5	714.0	714.5	712.6
6	719.5	720.0	721.6	.....	719.8	721.4	720.8	718.4	716.4	713.9	714.5	713.1
7	719.5	720.0	722.0	.....	719.7	721.5	720.7	717.7	716.2	713.9	714.5	713.3
8	719.5	720.0	723.9	.....	719.5	721.5	721.0	717.6	716.2	713.8	714.3	713.2
9	719.5	720.0	725.3	.....	719.2	721.9	721.0	717.7	716.2	713.8	714.1	712.9
10	719.7	720.0	725.4	.....	718.9	722.1	720.9	718.0	716.3	713.7	714.1	713.1
11	720.0	720.0	725.1	.....	718.8	722.6	720.9	717.9	716.0	713.7	714.2	713.4
12	720.1	720.0	724.7	.....	718.5	723.6	721.1	717.6	715.9	713.8	714.3	713.4
13	720.1	720.0	724.6	.....	718.4	724.8	721.1	717.6	715.8	713.7	714.3	713.4
14	720.2	720.1	724.9	.....	718.1	724.0	721.1	717.6	715.5	713.8	714.1	713.9
15	720.2	720.1	725.0	.....	718.1	723.9	720.8	717.6	715.4	713.7	713.9	713.8
16	720.2	720.2	724.9	.....	718.1	723.3	720.7	717.6	715.4	713.6	713.7	713.6
17	720.3	720.2	724.8	.....	718.4	722.8	720.7	717.5	715.3	713.8	714.0	713.6
18	720.0	720.2	724.6	.....	719.8	722.1	720.5	717.2	715.3	713.8	714.1	713.6
19	720.0	720.4	724.5	.....	720.8	721.6	720.3	716.7	715.2	713.7	713.7	713.5
20	720.2	720.6	724.6	.....	720.6	721.6	720.1	716.6	715.0	713.6	713.3	713.1
21	720.2	720.6	725.1	.....	719.9	721.6	719.9	716.5	715.0	713.5	713.4	712.8
22	720.1	720.6	728.2	.....	719.6	721.1	719.6	716.3	714.9	713.2	713.4	712.7
23	720.0	720.6	730.3	.....	719.3	721.0	719.6	716.3	714.8	712.9	713.3	712.9
24	719.8	720.7	730.5	.....	719.0	721.6	720.0	716.2	714.7	712.9	712.9	712.6
25	719.7	720.7	730.8	.....	718.9	722.7	719.8	716.1	714.5	713.8	712.7	.....
26	719.6	720.8	730.6	.....	718.8	722.6	719.6	716.0	714.5	714.0	713.3	.....
27	719.6	720.9	.....	723.0	720.3	722.8	719.7	715.9	714.4	714.0	713.5	.....
28	719.6	720.9	.....	721.9	721.8	723.5	719.6	715.8	714.3	714.1	713.4	.....
29	719.8	.....	.....	720.9	722.3	723.4	719.3	715.7	714.3	714.2	713.3	.....
30	719.9	.....	.....	720.3	722.3	722.6	719.2	715.6	714.2	714.3	713.2	.....
31	720.0	.....	.....	.....	722.2	.....	719.1	715.6	.....	714.3	.....	714.7

Missouri River.—Vermillion, Dak., 1882.

Day	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1	715.0	715.8	715.9	715.7	718.3	717.9	722.9	718.0	715.2	714.0	.....	.....
2	715.3	715.9	716.2	715.7	718.0	717.8	722.6	717.9	715.1	714.0	.....	.....
3	715.3	715.9	717.1	715.6	717.9	717.6	722.5	717.8	715.2	714.0	.....	.....
4	715.5	716.0	717.0	715.4	718.3	717.6	722.3	717.6	715.1	714.0	.....	.....
5	715.5	715.9	716.3	715.5	718.5	717.6	722.3	717.6	715.0	714.0	.....	.....
6	715.5	715.8	715.1	716.2	718.4	717.6	722.3	717.6	715.0	714.0	.....	.....
7	715.6	715.7	713.7	717.2	718.4	717.6	722.5	717.3	714.9	714.0	.....	.....
8	715.8	715.6	712.7	718.2	718.3	717.5	722.4	717.0	714.9	714.8	.....	.....
9	715.8	715.6	715.3	719.8	718.4	717.9	722.5	716.8	714.8	714.8	.....	.....
10	715.8	715.5	715.3	720.7	718.4	719.1	722.6	716.5	714.8	714.6	.....	.....
11	715.9	715.3	715.3	719.9	718.9	720.5	722.5	716.4	714.7	714.6	.....	.....
12	716.1	715.2	715.4	719.3	720.0	720.6	722.3	716.2	714.7	714.5	.....	.....
13	715.8	715.1	715.3	718.4	720.0	720.6	722.4	716.0	714.6	714.3	.....	.....
14	715.5	715.0	715.2	717.7	719.4	720.7	722.6	715.9	714.5	714.1	.....	.....
15	715.6	714.9	715.0	717.9	718.7	721.5	722.4	715.7	714.5	.....	.....	.....
16	715.5	714.5	714.9	718.2	718.8	722.0	722.4	715.6	714.4	.....	.....	.....
17	715.4	714.3	714.9	718.3	719.6	722.4	722.3	715.5	714.4	.....	.....	.....
18	715.4	714.3	715.0	718.0	720.7	723.0	722.1	715.3	714.4	.....	.....	.....
19	715.5	714.2	714.4	717.7	720.6	723.5	721.6	715.1	714.3	.....	.....	.....
20	715.6	714.3	713.9	717.6	720.3	723.7	721.3	714.9	714.3	.....	.....	.....
21	715.7	714.4	713.5	717.5	720.0	723.9	721.1	714.8	714.2	.....	.....	.....
22	715.7	714.6	713.6	717.4	719.3	724.2	720.2	715.0	714.1	.....	.....	.....
23	715.6	714.6	713.4	717.4	718.5	724.0	720.1	715.3	714.1	.....	.....	.....
24	715.6	714.7	713.4	717.5	718.1	724.3	720.0	715.1	713.9	.....	.....	.....
25	715.5	714.8	713.6	717.6	718.4	724.6	719.5	715.0	714.0	.....	.....	.....
26	715.7	715.0	713.8	717.8	718.7	724.1	719.2	714.9	714.0	.....	.....	.....
27	715.6	715.2	714.0	718.2	718.9	723.6	719.0	715.8	714.0	.....	.....	.....
28	715.7	715.4	715.6	718.8	719.0	723.3	718.7	715.7	714.0	.....	.....	.....
29	715.6		715.9	719.0	718.8	723.1	718.5	715.6	714.0	.....	.....	.....
30	715.7		715.8	718.5	718.8	723.0	718.3	715.4	714.0	.....	.....	.....
31	715.7		715.8		718.2		718.3	715.3		.....	.....	.....

APPENDIX A 7.

REPORT OF FIRST LIEUTENANT T. A. BINGHAM, CORPS OF ENGINEERS.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., April 1, 1886.

SIR: In connection with the survey of the Missouri River, now under way, by direction of the Commission, question arose as to the reliability of the elevations determined in past years; because the instruments used had been wye levels with New York rods, whereas the so-called "precise" leveling of the Mississippi River Commission had been done with Kern instruments and self-reading rods. The Coast and Geodetic Survey people, who are engaged upon a transcontinental line of levels, have advanced as far west of Saint Louis as Etlah, Mo., a station on the Missouri Pacific Railroad. For nearly 20 miles (from South Point to Etlah) their line lies along the right bank of the Missouri River where there are many of the U. S. E. bench-marks.

It was deemed best to send a party into the field to level over this 20 miles for two objects, viz:

(1) By connecting the U. S. E. and C. S. bench-marks to get a check on our own elevations.

(2) To determine how closely to a line of "precise" levels a line can be run with a wye level, the Coast Survey method and that of the M. R. C. being substantially the same.

The party started February 8, and returned March 6. The work cost \$365, not including salaries of assistant engineer and rodman, who were taken from the office force. Mr. Warren's report is appended.

While the party was absent in the field it was discovered that P. B. M. 12, of the Mississippi River Commission, at the mouth of the Missouri River, on which all the U. S. E. elevations depend, had not been finally determined when elevations were printed. Taking the figures given in Mississippi River Commission Annual Report for 1883, the correction to be applied to all our elevations is + 0'.341.

The accompanying diagrams were prepared by my direction to illustrate different methods of comparison.

Referring to sheet 1 and regarding the connections between the U. S. E. and C. S. benches, as accomplished without error, column 21 gives the differences between our corrected elevations and the Coast Survey elevations for the same bench-marks.

$$10^{\text{mm}} \sqrt{\text{dist. in kilometers}} \text{ (or } 0'.041621 \sqrt{\text{dist. in miles}} \text{)}$$

is the limit of discrepancy allowed in the Lake Survey (see Prof. Pap. Corps of Engineers, No. 24, p. 598).

In the instructions for precise leveling, prepared by Mr. L. L. Wheeler, under the direction of General Comstock (Report Chief of Engineers for 1880, p. 2433), the limit of allowable discrepancy was given as

$$5^{\text{mm}} \sqrt{\text{dist. in kilometers}} \text{ (or } 0'.02081 \sqrt{\text{dist. in miles.}} \text{)}$$

In the Annual Report Mississippi River Commission for 1883, p. 143, will be found the deduction, by Mr. L. L. Wheeler, that cumulative errors are "nearly if not quite proportional to the distance leveled, instead of the $\sqrt{\text{dist.}}$ "

In Appendix 11, Coast Survey Report for 1882, p. 522, is found the following note:

"With respect to leveling of precision executed of late years in Europe, in the opinion of the Geodetic Association a probable error in the resulting difference of height as large as $\pm 3^{\text{mm}}$ per kilometer (0'.01584 per mile) may still be tolerated, but one of $\pm 5^{\text{mm}}$ (0'.0264 per mile) would be considered as surpassing an allowable limit. A value of $\pm 2^{\text{mm}}$ (0'.01056 per mile) may be considered to represent a fair measure, and one of $\pm 1^{\text{mm}}$ (0'.00528 per mile) a measure of high precision."

The severest of these limits is the second given, which is the one adopted by the Mississippi River Commission.

Applying these tests to column 21, we find that all but one of the differences are within the severest limit.

Since the U. S. E. levels were carried down the river from Sioux City, differences shown in column 21 are quite satisfactory.

There is one difference that does not fall in line, but uncertainty exists as to the exact bench-mark in this case.

It seems as if a constant error appeared in these differences as they stand. This constant is not yet satisfactorily explained. It may never be, but it is proposed to

look into the matter carefully. P. B. M. 12, above referred to, will be re-examined, test levels will be run, the original notes will be re-examined and computed, &c.

All the notes of the U. S. E. levels have been examined by Mr. L. L. Wheeler, who reported that they were not susceptible of mathematical discussion, because the methods followed excluded independence in checking. His reports are appended.

This is unfortunate; but the method was one adopted necessarily by force of circumstances, and, as shown above, has been productive of very good results. Although the notes cannot be discussed, these results are certainly entitled to full credit unless disproved in future.

All that is immediately necessary is to correct our printed list for an error for which the U. S. E. Department is not responsible.

Now, as to the second point to be determined, we have the following facts:

(1) The "loop" agreed with the Coast Survey line and itself within 0'.011 over the entire distance, both up and down, of 40 miles. This is within the severest limit given above.

(2) The greatest difference of the mean (or checked) line from the Coast Survey was 0'.023, which occurred in a distance of about 23 miles. This is also within the severest limit.

(3) The greatest difference between the 1886 and C. S. line anywhere was 0'.05, also within the severest limit.

All this is a very good showing for the wye level, and serves to increase confidence in the work done by it under what may be called the Missouri River method.

It is believed that no other lines of levels so extensive have been run with the so-called "ordinary" instruments, nor any lines done with wye levels subjected to such minute and detailed care in the use of instrument and rod and in methods of observation. Full details of methods were given in report of secondary triangulation, dated March 1, 1885.

It is to be noted, also, that conditions of weather were very unfavorable when this comparison was made, as Mr. Warren explains in his report.

Again, with precise levels, properly conducted, work is done only for an hour or so in the morning and another hour or so in the evening, while this comparison was made by steady work all day when weather permitted.

We have, then, very good reason to abide by our elevations as at present determined, unless, as before remarked, future checks discover material errors.

But all this is by no means an argument against precise levels; merely an argument against discrediting those already determined on the Missouri River and to replace which will cost a large amount of money.

The following table shows the results obtained by the levels already run from the mouth of the river to Pierre, Dak., a total distance of 1,170.7 miles.

Year.	Place.	Miles.	Check.	Maximum difference at any point.	$\frac{0'.021 \times}{\sqrt{\text{dist. miles.}}}$	0'.0053 per mile.
1880	{ Sioux City, Iowa-Lexington, Mo. Lexington, Mo.-mouth Missouri River	483.5	{ Independent levels connecting with same bench-marks. }	0.182	0.458	2.553
1881		319.3		.173	.372	1.686
1881	Fort Randall, Dak.-Sioux City, Iowa	179		.082	.278	.945
1882	Pierre, Dak.-Fort Randall, Dak.	190		.154	.287	1.003
1885	Upper Missouri River (continuous check-levels).....	17		.021	.086	.0898

Column 6 shows the amount of error allowable by the severest test, viz: That of the Mississippi River Commission—

$$5^{\text{mm}} \sqrt{\text{dist. in kilometers}} \text{ (or } 0'.021 \sqrt{\text{dist. in miles}} \text{).}$$

It may be objected that this test cannot be applied to levels run as the Missouri River levels were run. This is a fair objection; but as the first line and its check were never at any time farther apart than indicated in column 5, the application of the test shows the degree of care with which the line was run; and it has been before shown that the elevations as they stand are worthy of credit, although not susceptible of discussion.

Very respectfully, your obedient servant,

THEO. A. BINGHAM,
First Lieut. of Engineers,
Secty. Mo. River Commission.

Maj. C. R. SUTER,
Corps of Engineers, U. S. A.,
President Missouri River Commission.

OFFICE OF MISSISSIPPI RIVER COMMISSION,
Saint Louis, Mo., March 3, 1886.

SIR: I have the honor to report that I have examined the notes of the levels along the Missouri River from Sioux City to the mouth of the river.

I find that, on each of the four sections, into which the work was divided, the terminal differences between the two lines of levels were very small, in fact much smaller than many of the differences arising between successive bench-marks. It is evident from the notes that a partial adjustment between the two lines of levels has been made in the field, and that the two measurements are not entirely independent on that account.

I submit herewith two sample tables, the first of which would give as good an idea of the precision of the work as can be obtained, but would indicate greater precision than the work possesses on account of the partial adjustment which has taken place.

In case that it was desired to publish the data the second form should be used, and elevations with reference to the Saint Louis City directrix given. It would require very little labor to make the first table, but it would have the disadvantage of not being finally of much use. The second form would require about twice the labor of the first.

In regard to a recomputation of the notes, the value of such recomputation could only be known after it had been made. I have noticed, in looking over the notes, a few small errors of computation, but none that would materially change the elevations. In one instance, however, I noticed a discrepancy of five feet between the two lines of levels for which no explanation appears in the notes.

Very respectfully, your obedient servant,

L. L. WHEELER,
Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers U. S. A.,
Secretary Missouri River Commission.

FORM No. 1.

Bench-marks.	Elevations.		First elevation.	Second elevation.	Discrepancy between successive bench-marks.
	First party.	Second party.			

FORM No. 2.

Bench-marks.	Difference of elevation.			Elevation above Saint Louis directrix.	Discrepancy.	
	First party.	Second party.	Mean.		Partial.	Total.

OFFICE MISSISSIPPI RIVER COMMISSION,
Saint Louis, Mo., March 4, 1886.

SIR: I have the honor to report that I have examined the notes of the levels between Pierre and Sioux City.

I find that the same adjustment has been made in this section as between Sioux City and the mouth of the river. This work has been done by two parties, leveling alternate portions, each party consisting of two levelers. Whenever a new division has been commenced a new datum has been assumed and elevations along that portion of the river given with reference to that datum. On this account it would not be

possible to make a table like Form 1, previously submitted, without either performing some computation or including in the table the pegs on which divisions joined.

On account of the number of datum planes to which elevations along this portion of the river have been referred, errors of computation are more likely to have occurred, and hence recomputation is probably more necessary than in the portion below Sioux City.

Very respectfully, your obedient servant,

L. L. WHEELER,
Assistant Engineer.

First Lieut. T. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., March 22, 1886.

SIR: In pursuance of your instructions, issued early in February, "to organize a party and proceed to the vicinity of South Point and Etlah, Mo.," both places being on the Missouri River and on the line of the Missouri Pacific Railroad, and "run a duplicate line of check-levels between bench-marks of the U. S. Coast and Geodetic Survey of 1882, which were located near the places named," I, on the morning of February 8, 1886, left the city with the following party: Mr. E. L. Cooley, assistant engineer, acting rodman, one shademan, and two axmen. Upon arriving at Washington, Mo., 10.46 a. m., work was at once begun, putting instruments, rods, and shades in condition for active work.

Owing to an indefinite description of the Coast and Geodetic B. M. XII, which should be near South Point, and pending a further and more accurate description, work was commenced from the C. & G. B. M. L 3, located on the German Catholic Church at Washington, Mo. A line was carried down the hill connecting with the Missouri River Survey Bench Marks "74" and "75", of 1879, and thence west along the line of the Missouri Pacific Railroad, connecting with such bench-marks of previous levels as could be found. The work was continued westward, or up-stream, until near New Haven, some 12 miles, when, the desired description of the C. & G. B. M. XII having been obtained, connection between the C. & G. Bench Marks L 3 and XII was made, a distance of some 2½ miles, and a return or check-line run with the following results, as compared with the C. and G. line:

My first line down, from L 3 to XII, gave the elevation of XII as $+0'.002$ above the C. & G. The return line gave an elevation for L 3 of $+0'.005$ above the C. & G., a difference between my two lines of $+0'.007$.

Work was then resumed westward from near New Haven, and at the latter place connection was made with the C. & G. B. M. "M 3," giving a difference of $+0'.042$ over the C. & G. line.

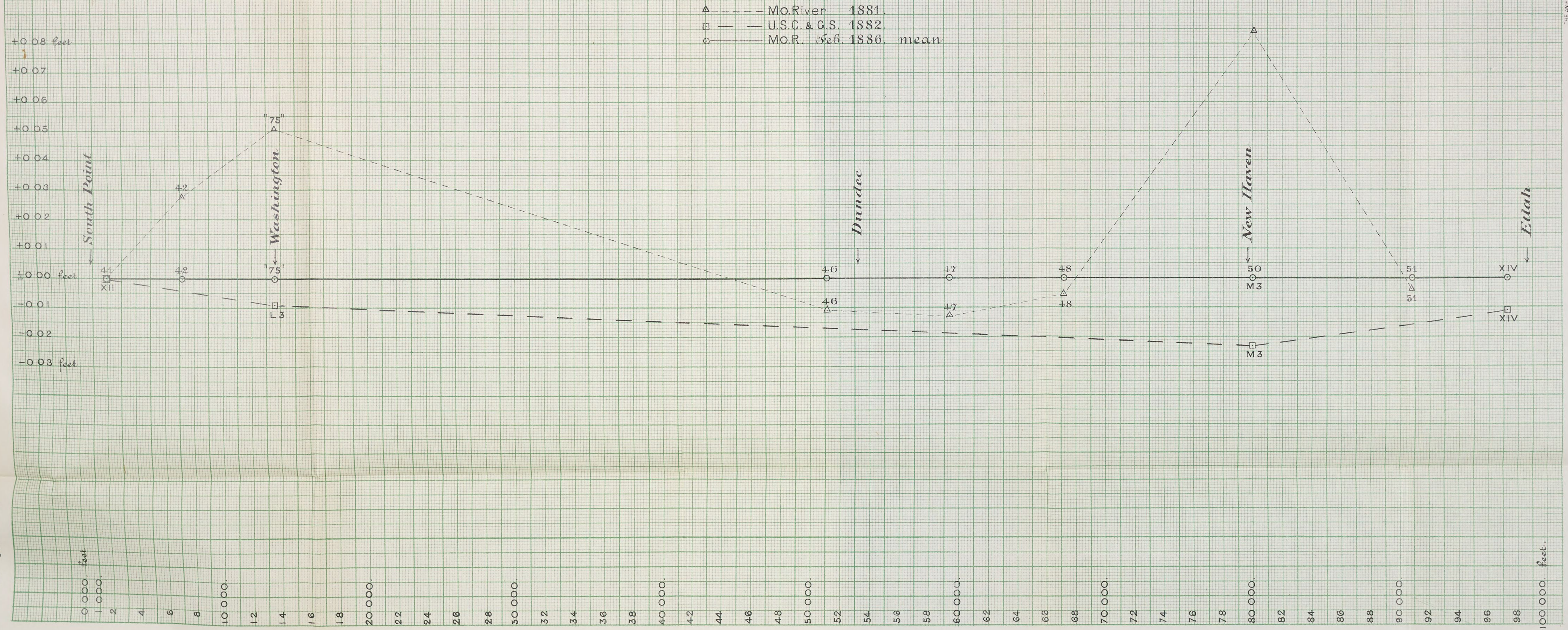
The line concluded to Etlah, some 18 miles from B. M. XII, gave a difference of $+0'.025$ above the recorded C. & G. elevation of B. M. XIV, as a result of the continued line, connection having been made as stated with B. M. L 3.

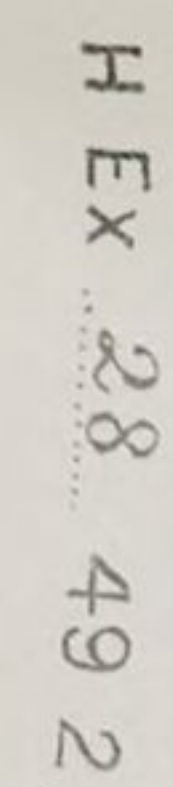
Many difficulties were encountered in this line. The frosty and thawing ground, the sudden changes in temperature, from bright sunshine to freezing and rain and snow, made work at times very difficult. The constant watch of the instrument and utmost care was necessary to secure fair readings.

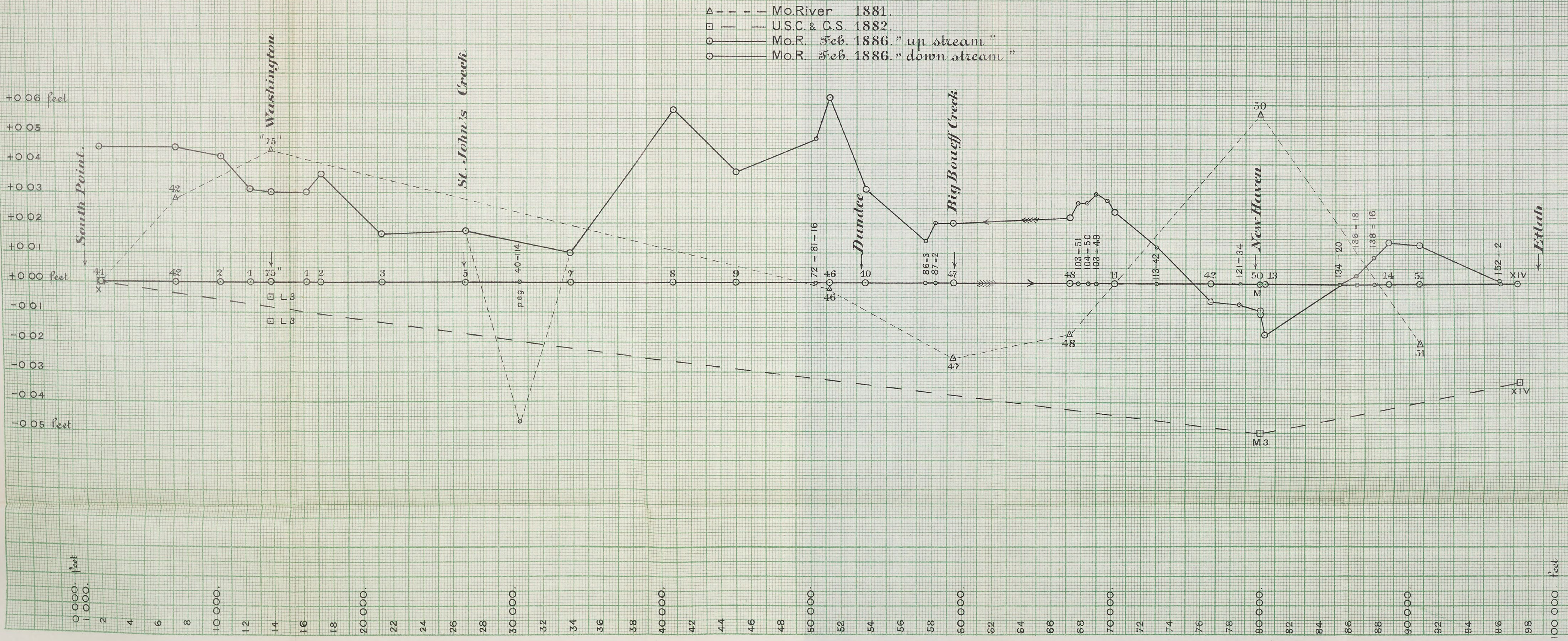
Returning, the work was taken at Etlah and carried on down-stream under more favorable conditions, both of ground and weather, a cloudy sky and mostly even temperature prevailing. The results of the two lines were as follows, comparisons being made with the Coast and Geodetic elevations:

	Bench-marks.			
	XII.	L 3.	M 3.	XIV.
C. and G. elevation, 1882.....	76.451	131.898	95.644	95.415
My first line.....	76.451	131.903	95.686	95.440
My second line.....	76.455	131.909	95.652	95.415
Difference, first line(up).....	0.000	+0.005	+0.042	+0.025
Difference, second line (down).....	+0.004	+0.002	+0.008	+0.000

The Coast and Geodetic Bench Mark XII, and the Missouri River Survey Bench Mark 41, were found to be the same; the C. and G. giving the elevation of the same



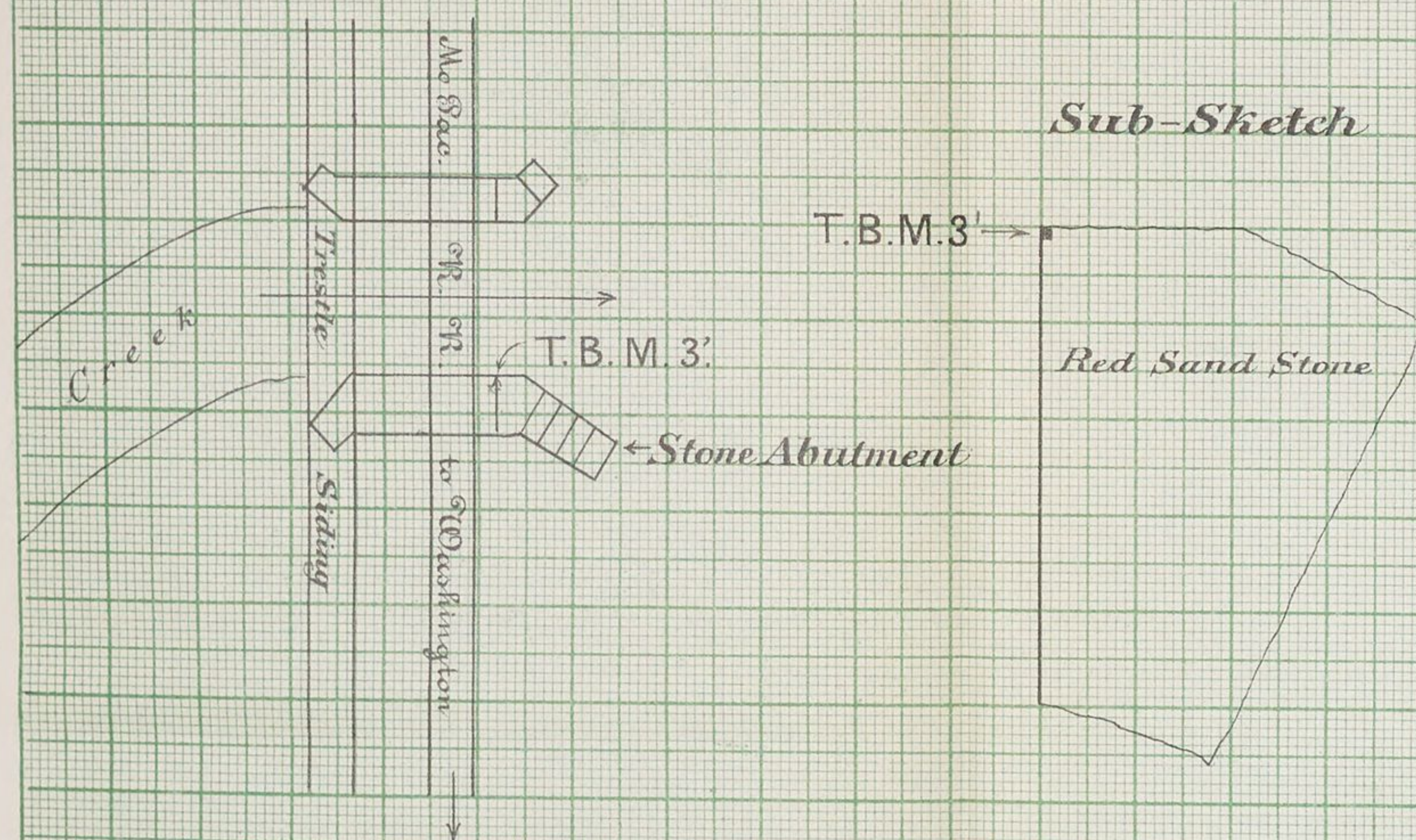




H EX 28 49 2

T. B. M. 3'. Elevation 76.185 feet
above St. Louis City Directrix
determined February 1886.

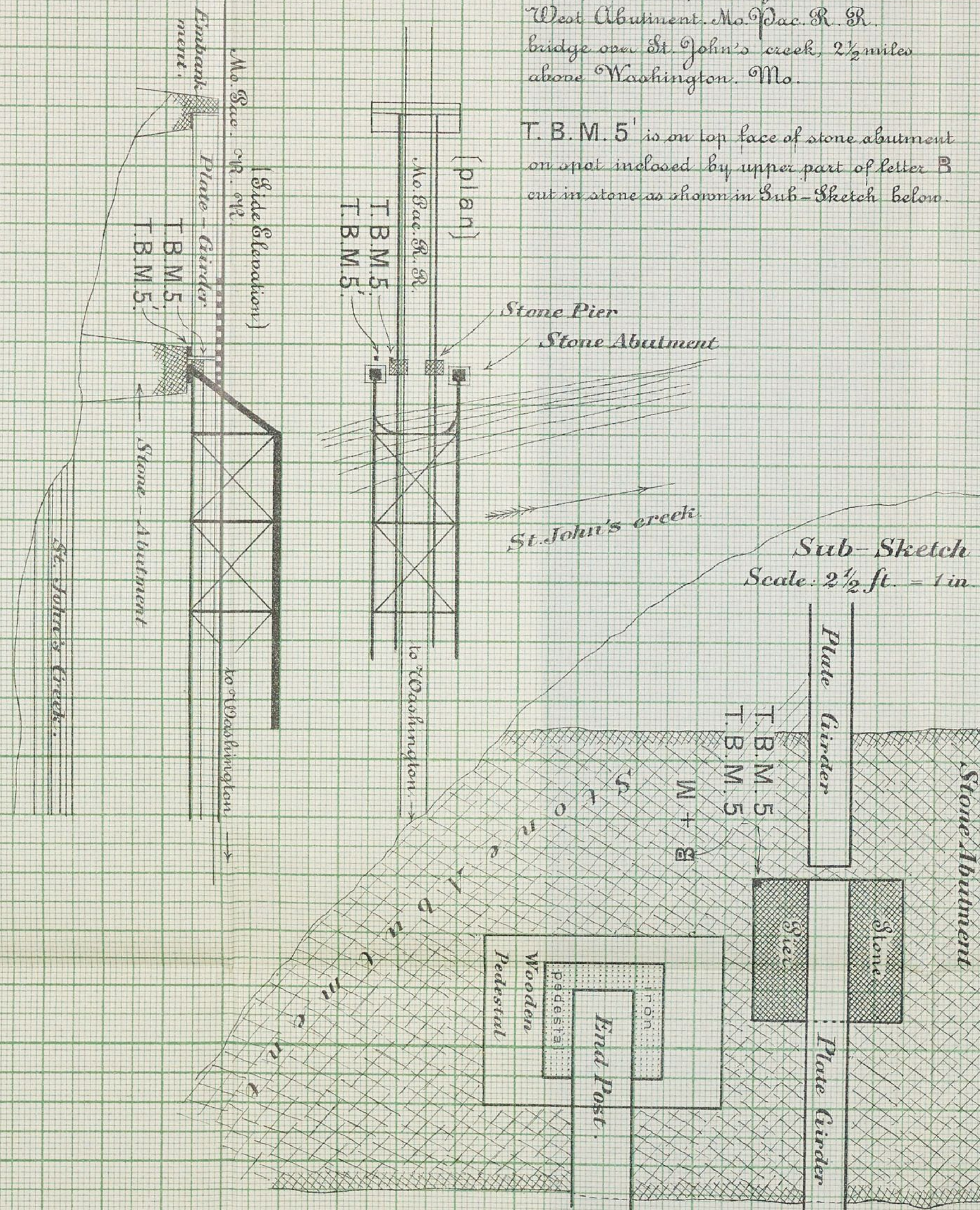
Scale: approx. 25 ft. = 1"



T.B.M. 3' is on stone abutment of Mo. Pac. R. R. open culvert No 142
about 7/8 miles above Washington Mo. R.R. Station house.

T. B. M. 5. and 5' Elevation 5: 80.753 feet.
5': 78.239 "

Scale: approx. 25 ft. = 1 in.

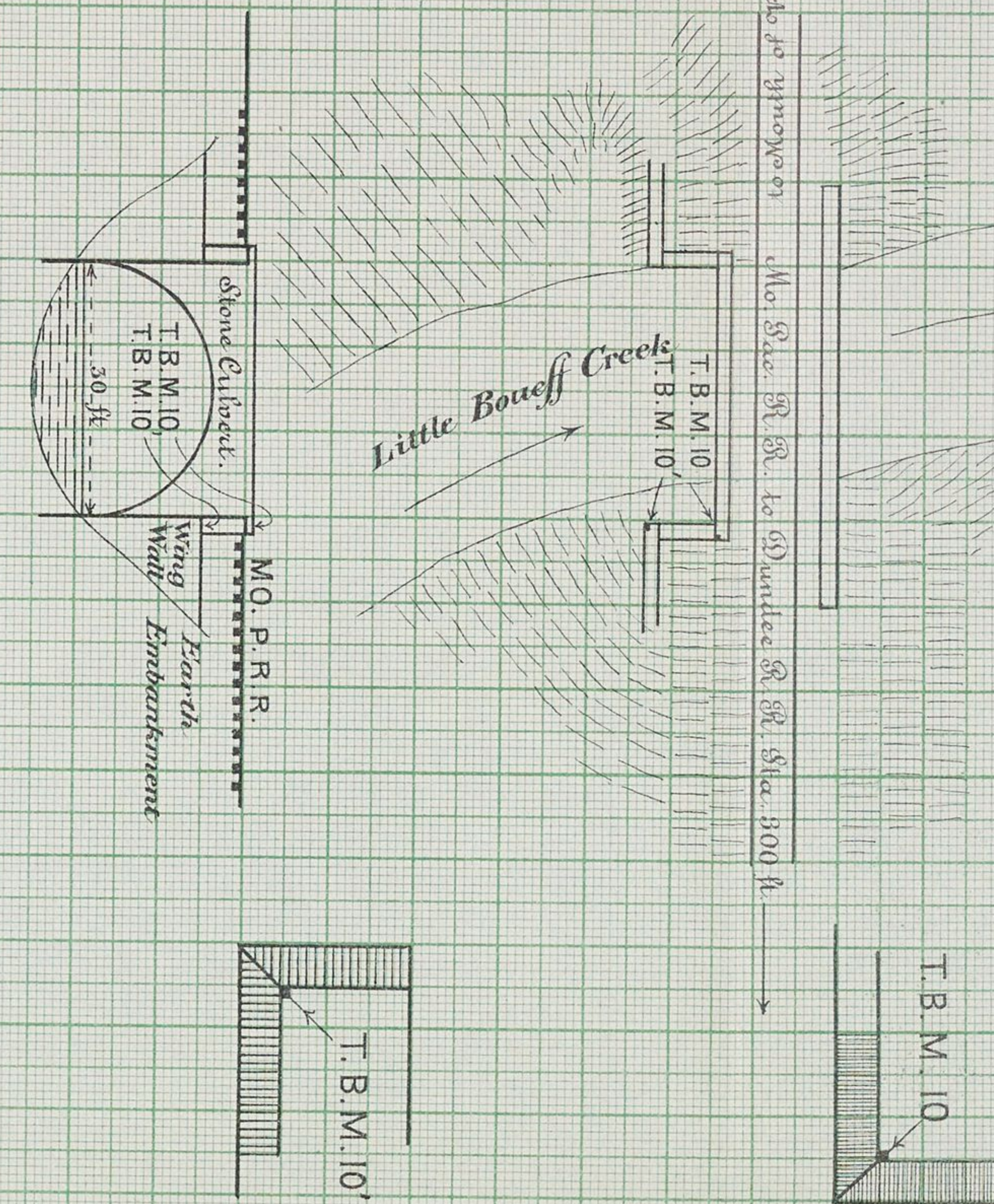


T.B.M. 5 is on extreme corner of
stone pier under plate-girder
West Abutment, Mo. Pac. R. R.
bridge over St. John's creek, 2 1/2 miles
above Washington, Mo.

T. B. M. 5' is on top face of stone abutment
on spot inclosed by upper part of letter B
cut in stone as shown in Sub-Sketch below.

T. B. M. 10 and 10'.

Elevation 10 : 87.637 feet
do 10 : 81.503 "



T.B.M. 10 is on bevelled corner of, as shown in sketch, of stone cope of arched
culvert 300 ft. above Dundee R. R. Station house and 300 ft. below mouth of
Mo. Pac. R. R. Tunnel.
T.B.M. 10 is on similar corner of wing wall as shown in sketch.

SHEET 5.

T.B.M. 3

T.B.M. 3

Stone Abutment



T.B.M. 3. in an elevation of the S.W. corner of the

stone abutment of the H. H. station

as 76.451, and the Missouri River Survey as 76.250, both derived from the Saint Louis City Directrix as 0.000.

Connection was made on both lines with Missouri River Bench Marks 41, 42, "74," and "75," of 1879, 46, 47, 48, 50, and 51.

The table of differences and profiles accompanying this report shows the relative bearings and different elevations of all bench-marks as derived by the several different lines. Bench-marks were established on the stone wing-wall or abutment, of a double-track culvert about 1 mile above Washington; a second on the permanent pier, or abutment of Saint John's Creek, $2\frac{1}{2}$ miles above Washington, and a third on a substantial sandstone covered culvert over the Little Boeuf Creek at Dundee. The elevations and descriptions of the same are attached to the sketches hereto attached.

These bench-marks are intended to take the place of bench-marks destroyed, several of those of the Missouri River Survey not being found.

The instrument used on this work was a Buff & Berger V-level, "No. 391," and New York rod and target, such as are in common use on the surveys of the Missouri River. Attached to the rod was a movable universal bubble or level, which enabled the rodman to keep the rod vertical.

Equal back and fore sights were taken, usually 300 feet, the regularity of telegraph poles being tested, the distance between two being used. After setting up the instrument, and good and substantial pegs or turning points having been secured, the rodman gave the leveler two or more readings and settings of target, or until two readings would not show a difference to exceed 0'.001, the target in each case being moved up or down and the same method used as that in use on the leveling of the Missouri River Survey, as to a constant check between the leveler and rodman of elevations, heights of instrument, and rod readings. A record of each reading was kept by the rodman, which will give a fair indication of the differences of temperature, sunshine and shadow, and cloudy and even temperature.

Under specially good conditions of air and temperature two lines and check were run, in which the rod readings are an indication of the steadiness of the atmosphere. The first, a line starting one-half mile below Washington, was run down $1\frac{1}{2}$ miles to B. M. XII and returned the same day, a check of 0'.003 being the result; while the line between B. M. XII and 42, a mile, was run and repeated with an absolute check.

A duplicate line, run between B. M. 47 and 46, on my check-line for verification gave even better results, the distance $1\frac{3}{4}$ miles, check 0'.001. In both these instances the recorded readings will show but few instances of more than two settings of the target to meet the requirements of 0'.001.

The C. & G. Bench Mark XIII, at New Haven, was not found, it having been destroyed in repairs on the culvert by the railroad company.

A correction of +0'.341 having been received from the Mississippi River Commission, such will have to be added to elevations of bench-marks of the Missouri River Survey of 1881, and would make the elevation of B. M. 41 = 76'.591.

Sheet 1, accompanying this report, shows a complete tabulation of the different lines run.

Sheet 2.—Profile, referring the Coast and Geodetic line, and Missouri River Survey line of 1881, to the mean line of this survey.

Sheet 3.—Profile, referring the two previous lines and the down-stream line of this survey to the up-stream line of same.

Sheet 4.—Profile, showing line as started at C. and G. B. M. XII, returned in a "loop" with the two previous lines referred to up-stream line of this survey.

I have the honor to be, your obedient servant,

ALBERT WARREN,
Assistant Engineer.

First Lieut. THEO. A. BINGHAM,
Corps of Engineers, U. S. A.,
Secretary Missouri River Commission.

SHEET 1.

Number of station.			Distances, in feet, from South Point "up-stream."	Missouri River, 1886, "up-stream."		Missouri River, 1886, "down-stream."			Mean eleva- tion referred to XII as origin.	Elevations, U. S. Coast and Geodetic Survey, 1882.
U. S. Coast and Geodetic Survey, 1882.	Missouri River, 1881.	Missouri River, 1886.		Elevations, in feet, from field notes.	Referred to South Point, XII, as origin.	Elevations, in feet, from field notes.	Referred to South Point, XII, as origin.	Referred to "up-stream" as origin.		
1	2	3	4	5	6	7	8	9	10	11
XII.	41	XII=41	1,000	76.451	76.451	76.453	76.451	76.496	76.451	76.451
	42	42	6,200	73.115	73.115	73.117	73.115	73.160	73.115	.....
	.....	2'	9,200	72.512	72.512	72.511	72.509	72.554	72.511	.....
	.....	1'	11,300	72.956	72.956	72.944	72.942	72.987	72.949	.....
	"75"	"75"	12,670	83.730	83.730	83.717	83.715	83.760	83.723	.....
	"75"	"75"	.....	83.717	83.730	.....	.....	.....	.....	.....
	L 3.	L 3	.....	131.890	131.903	.....	.....	.....	.....	131.898
	L 3.	L 3	.....	.....	.....	.....	.....	.....	131.907	.....
	L 3.	L 3	.....	131.898	131.911	.....	.....	.....	.....	131.898
	"75"	"75"	.....	83.717	83.730	.....	.....	.....	.....	.....
M 3.	"75"	"75"	12,670	83.717	83.730	83.747	83.715	83.760	83.723	.....
	.....	L	15,200	77.306	77.319	77.336	77.304	77.349	77.312	.....
	.....	2	16,100	76.447	76.460	76.483	76.451	76.496	76.456	.....
	.....	3	20,200	78.506	78.519	78.522	78.490	78.535	78.505	.....
	.....	5	25,900	80.754	80.767	80.771	80.739	80.784	80.753	.....
	(Peg 40=114)	.....	29,500	83.387	83.400	83.340	83.308	83.353	83.354	.....
	.....	7	32,900	80.517	80.530	80.527	80.495	80.540	80.513	.....
	.....	8	39,800	85.443	85.456	85.501	85.469	85.514	85.463	.....
	.....	9	44,000	89.978	89.991	90.015	89.983	90.028	89.987	.....
	(Rock 72=81=16)	.....	49,300	87.473	87.486	87.521	87.489	87.534	87.488	.....
	46	46	50,200	98.176	98.189	98.238	98.206	98.251	98.198	.....
	.....	10	52,600	87.631	87.644	87.662	87.630	87.675	87.637	.....
	(Rock 86=3)	.....	56,600	90.414	90.427	90.428	90.396	90.441	90.412	.....
	(Peg 87=2)	.....	57,200	88.926	88.939	88.946	88.914	88.959	88.927	.....
	47	47	58,400	87.113	87.126	87.133	87.101	87.146	87.114	.....
	48	48	66,200	91.454	91.467	91.476	91.444	91.489	91.456	.....
	(Peg 103=51)	.....	66,800	91.070	91.083	91.097	91.065	91.110	91.074	.....
	(Stone 104=50)	.....	67,400	90.208	90.221	90.235	90.203	90.248	90.212	.....
	(Peg 105=49)	.....	68,000	90.808	90.821	90.838	90.806	90.851	90.814	.....
	.....	11	69,200	88.288	88.301	88.312	88.280	88.325	88.291	.....
M 3.	(Stone 113=42)	.....	72,100	91.641	91.654	91.653	91.621	91.666	91.638	.....
	.....	12	75,700	89.699	89.712	89.693	89.661	89.706	89.687	.....
	(Culvert 121=34)	.....	77,600	91.110	91.123	91.103	91.071	91.116	91.097	.....
	.....	M 3	79,000	95.681	95.694	95.672	95.640	95.685	95.667	95.644
	50	50	79,000	96.377	96.390	96.367	96.335	96.380	96.363	.....
	.....	13	79,300	92.852	92.865	92.835	92.803	92.848	92.834	.....
	(Stone 134=20)	.....	84,300	93.737	93.750	93.737	93.705	93.750	93.728	.....
	(Stone 136=18)	.....	85,500	95.475	95.488	95.478	95.446	95.491	95.467	.....
	(Peg 138=16)	.....	86,700	94.236	94.249	94.245	94.213	94.258	94.231	.....
	.....	14	87,700	94.227	94.240	94.241	94.209	94.254	94.225	.....
XIV.	51	51	89,800	92.480	92.493	92.493	92.461	92.506	92.477	.....
	(Stone 152=2)	.....	95,100	95.411	95.424	95.412	95.380	95.425	95.402	.....
	.....	XIV	96,300	95.435	95.448	95.435	95.403	95.448	95.426	95.415

SHEET 1—Continued.

Number of station.			Missouri River, 1881.			Differences from 1886, "up-stream."				Differences from 1886, mean elevations. Referred to XII as origin at South Point.		
U. S. Coast and Geodetic Survey.	Missouri River, 1881.	Missouri River, 1886.	Elevations from list printed 1883.	Elevations referred to XII as origin.	Elevations from list corrected, 1886.	Referred to XII as origin.				Referred to XIV as origin. "Down-stream."		
						"Down-stream."	U. S. Coast and Geodetic Survey.	Missouri River, 1881.		U. S. Coast and Geodetic Survey.	Missouri River, 1881.	Missouri River, 1881, corrected, 1886.
1	2	3	12	13	14	15	16	17	18	19	20	21
XII.	41	XII=41	76.250	76.451	76.591	.000	.000	.000	+.045	.000	.000	+.140
	42	42	72.942	73.143	73.283	.000		+.028	+.045		+.028	+.168
		2'				-.003			+.042			
		1'				-.014			+.031			
	"75"	"75"	83.573	83.774	83.914	-.015		+.044	+.030		+.051	+.191
	"75"	"75"	83.573	83.774	83.914							
L 3.		L 3					-.005					
L 3.		L 3								-.009		
L 3.		L 3					-.013					
	"75"	"75"	83.573	83.774	83.914							
	"75"	"75"	83.573	83.774	83.914	-.015		+.044	+.030		+.051	+.191
		1				-.015			+.030			
		2				-.009			+.036			
		3				-.029			+.016			
		5				-.028			+.017			
	(Peg 40=114)					-.092			-.047			
		7				-.035			+.010			
		8				+.013			+.058			
		9				-.008			+.037			
	(Rock 72=81=16)					+.003			+.048			
	46	46	97.986	98.187	98.327	+.017		-.002	+.062		-.011	+.129
		10				-.014			+.031			
	(Rock 86=3)					-.031			+.014			
	(Peg 87=2)					-.025			+.020			
	47	47	86.900	87.101	87.241	-.025		-.025	+.020		-.013	+.127
	48	48	94.249	94.450	94.590	-.023		-.017	+.022		-.006	+.134
	(Peg 103=51)					-.018			+.027			
	(Stone 104=50)					-.018			+.027			
	(Peg 105=49)					-.015			+.030			
		11				-.021			+.024			
	(Stone 113=42)					-.033			+.012			
		12				-.051			-.006			
	(Culvert 121=34)					-.052			-.007			
M 3.		M 3				-.054	-.050		-.009	-.023		
	50	50	96.246	96.447	96.587	-.055		+.057	-.010		+.084	+.224
		13				-.062			-.017			
	(Stone 134=20)					-.045			.000			
	(Stone 136=18)					-.042			+.003			
	(Peg 138=16)					-.036			+.009			
		14				-.031			+.014			
	51	51	92.272	92.473	92.613	-.032		-.020	+.013		-.004	+.136
	(Stone 152=2)					-.044			+.001			
XIV.		XIV				-.045	-.033		.000	-.011		

APPENDIX A 8.

REPORT ON THE COMMERCE OF THE MISSOURI RIVER.

MISSOURI RIVER COMMISSION,
Saint Louis, Mo., June 30, 1886.

SIR: In accordance with the directions of the Commission, that the "secretary procure statistics as complete as possible of the commerce of the Missouri River," I have the honor to report as follows:

The results of my endeavors to collect data, reaching to date, and full, have been very meager.

Letters and lists of exact information wanted were sent to all addresses that could be heard of as likely to prove fruitful. Very few answers were received, and these very incomplete. Steamboat men are very unwilling to give definite information as to the trade of their companies, apparently from fear of the railroads. Even when assured that their disclosures would be kept confidential, their caution refused to be overcome.

It has been impossible, too, to get a statement of the money-value of the commerce of the river. What values are given for the upper river are merely guesses, and for the lower river, Mr. George H. Morgan, secretary of the Saint Louis Merchants' Exchange, tells me they have no values, and he does not know how to suggest a method of getting at them.

At the present time the river is divided into two almost distinct sections as regards its navigation, viz, the Lower River, from its mouth to Sioux City; and the Upper River, from Sioux City up. Saint Louis is the principal home-port for the Lower River, and Bismarck for the Upper. There is, besides, a number of steamers, mostly quite small, engaged as ferries, or in a limited coasting trade.

Tables 1, 2, and 3 give a list of steamboats authorized to ply on the Missouri River, with all the details that could be learned. The list is mainly from custom-house records. There are 59 in all. Of these, 19 belong wholly to the Upper, and 18 wholly to the Lower River. The rest are scattering.

Tables 4, 5, 6, 7, and 8 give the latest obtainable returns as to population and products of the river counties along the Missouri, the idea being that the river counties might be regarded as constituting the main portion of the Missouri Valley, and especially as the portion tributary to the river. Some of the tables have returns for one year only, and others have returns for several years. But it will be seen, by the percentages given between river counties and the entire State, or territory, that the country along the river is falling off in its percentage of increase, as compared with sections farther removed from the river. This is natural enough. For as long as the river was the only highway, settlement and production clung to its banks. As railroads were pushed, new avenues for immigration were opened, and the river country fell off, when compared with a whole State or territory, while, as a single highway, it has kept its own.

LOWER RIVER.

Only 3 boats did through business in 1885, viz, Dacotah, Carroll, and Meade, of the Saint Louis Electric Packet Company, Jenkins & Sass, agents.

Their down-stream business was good, but not as good as in 1884, attributed to failure of crops and the reduced acreage sowed to wheat and corn, which, with lumber and some stock, constitute the usual down-stream cargo. The up-stream cargo is general merchandise.

During the season of 1885 these three boats carried 115,000 tons of through freight up-stream to Kansas City and Saint Joseph, and 20,000 tons of way freight; total, 135,000 tons.

The down-stream freight was 50,000 tons. Total moved during the season, 185,000 tons.

Taking 20,000 pounds, or 10 tons, as a car load, and counting 30 cars to the train, we have 617 trains as necessary to move 185,000 tons of freight, or one train a day each way for every day in the year excepting Sundays.

Forty round trips were made by these boats during the season, from Saint Louis to Kansas City, and three of these trips were continued to Saint Joseph.

Of these boats the Dacotah and Carroll can carry, so their agents say, from 1,000 to 1,200 tons. Their average load, down-stream, was 800 tons grain and 350 head stock; up-stream 500 to 1,000 tons.

No barges are towed on Lower Missouri—they cannot be insured.

Up-stream business was best in 1885; down-stream, in 1884. Rates of insurance, Saint Louis to Kansas City, 1885, 2 per cent.; 1884, 1 per cent. Tariff per 100 pounds of grain, 1885, 10 to 15 cents; 1884, same.

Capt. James Kennedy, of Kansas City, says:

"With good crops of corn and wheat there is plenty of business between Saint Joseph and Saint Louis still for three or four good boats, both up and down stream. This leaves out the handling of grain at Kansas City and Saint Joseph, supposing the railroads to control those points."

The above corroborates the following extract from the Annual Report of the Saint Louis Merchants' Exchange for 1883, p. 29.

"The Missouri River business, though apparently declining in relative importance, is still of value, and worthy of more careful and systematic cultivation. The construction of railroads environing both banks of this river has cut off a large part of the trade formerly carried by steamboats; but there is still much which is and will be reached by them alone, and from which a limited number of boats can be well sustained.

"It is confidently believed that at some future date the channel of this river will be so much improved that a much larger proportion of the heavier products of the adjacent country will seek a market over its waters."

In this connection the following facts may not be too old:

In 1878 the Mississippi Valley Transportation Company sent 3 empty barges to Kansas City. They started back July 5, with 83,450 bushels of corn. They had no mishap, but the barges were too large for the Missouri.

The Babbage Transportation Company followed with 3 better barges, which came up empty three times and took away, July 27, 62,038 bushels corn; August 12, 62,938 bushels corn; August 31, 44,198 bushels wheat. They had no mishap, but were stopped during August by low water. Totals, 208,516 bushels corn, 44,198 bushels wheat.

Although the barges were empty one way, they cleared 100 per cent. profit for the owners.

It will be observed that the barge business was stopped by low water. This is where the advantage of river improvement comes in, for low water occurs just about harvest time.

Table 9 shows the relation of the Missouri River trade to the entire railroad business of Saint Louis for the eleven years, 1874 to 1885. It will be noticed that the percentage gets slowly smaller, being for 1885 about 0.2 per cent.

Table 10 shows the relation between the Missouri River trade and its competing railroad lines for the ten years ending 1885. During all these years its trade has been very small, in the light of this comparison, and of late years it has been pretty steady at 2 to 2.5 per cent.

Table 11 is substantially table 10 itemized, and shows the character of the Lower River commerce.

Table 12 gives certain statistics of the business done at Leavenworth, Saint Joseph, and Omaha.

In 1879 the products of the Missouri River Valley were (call for convention, Kansas City, November 1885): wheat, 61,116,377 bushels; corn, 414,349,526 bushels.

The following table shows the products of the river counties for 1880, in round numbers (Census Reports):

State or Territory.	Population.	Corn.	Oats.	Rye.	Wheat.	Barley.
		<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Missouri.....	554,000	61,685,000	6,000,000	164,000	11,000,000	87,000
Kansas.....	92,400	7,000,000	638,000	21,000	1,500,000	44,000
Nebraska.....	130,000	23,000,000	1,750,000	108,000	2,200,000	400,000
Iowa.....	112,000	25,500,000	1,100,000	54,000	1,650,000	200,000
Montana.....	17,200	1,500	500,000	.....	280,000	27,000
Dakota.....	31,000	1,070,000	400,000	4,800	221,000	42,000
Total.....	936,600	118,256,500	10,388,000	351,800	16,851,000	800,000

The totals in this table are smaller than those given above for 1879, because in the table only the river counties are considered, and in the others the entire country drained by the Missouri River.

For Missouri (Table 4) I have no details later than 1880.

For Kansas I have details for 1883 and 1884 (Table 5), and deduce the following yearly percentages of increase over 1880, to be used in calculating a table for 1885.

Population.....	per cent..	3
Corn.....	per cent..	5
Oats.....	per cent..	15
Rye.....	per cent..	75
Wheat.....	per cent..	16

For Nebraska I have details for 1885.

For Iowa I have no details later than 1880.

For Montana I have details for 1883, and deduce the following yearly percentages of increase, over 1880, to be used in calculating a table for 1885.

Corn.....	per cent.. 100
Wheat.....	per cent.. 3.3
Oats.....	per cent.. 33
Barley.....	per cent.. 16

For Dakota I have details for 1885.

Using these yearly percentages of increase where given, and where not given using the yearly percentages of increase for 10 years, as obtained from Census Reports of 1870 and 1880, I get the following table, whose figures are undoubtedly much below actuality.

Products Missouri River Valley, 1885.

State or Territory.	Population.	Corn.	Oats.	Rye.	Wheat.	Barley.
		<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Missouri.....	700,000	72,000,000	10,200,000	200,000	13,000,000	100,000
Kansas.....	135,600	8,640,000	1,415,000	100,000	2,892,000	60,000
Nebraska.....	200,000	34,156,000	3,852,000	794,000	2,500,000	557,000
Iowa.....	168,000	178,500,000	2,200,000	864,000	5,362,000	600,000
Montana.....	21,500	7,500	830,000	600	420,000	93,000
Dakota.....	72,000	3,800,000	2,250,000	26,000	1,109,000	121,000
Total.....	1,297,100	297,103,500	20,747,000	1,984,600	25,283,000	1,531,000

The details of 1885 for Nebraska were received after calculations for the above table had been made and were found to be less than actuality, except for corn. Hence I believe, the figures of the above table are not far from the truth.

UPPER RIVER.

The principal home port is Bismarck, Dak., where a railroad first crossed the upper river. As other railroads have pushed westward minor ports have grown up. But there are, and always will be, many "landings" and settlements dependent entirely on the river as a highway; and even from early years the trade of the upper river has been lucrative in spite of its difficulties.

The up-stream cargo is, as usual, general merchandise, and the down-stream hides, wool, furs, ore, and, especially of late years, grain.

The river is navigable to Benton from about May to the middle of August, and from then to the middle of October, the water being too low for boats above Cow Island, freights are landed there and hauled at a rate of 2 to 2½ cents per pound to their destination.

For the year 1867, Major Howell gives quite a comprehensive report, hereto appended and marked I.

From 1870 to 1877, it appears, after considerable investigation, with meager results, that the river trade increased 50 per cent., owing to improvement works.

During 1877, 25 steamers arrived at Fort Benton, landing 5,283 tons of freight and 1,500 passengers. These boats took down river 3,200 tons of freight and 500 passengers. The total value of the commerce of the river for that season was very nearly \$3,500,000.

In 1878 and 1879, 46 steamers arrived at Benton, being nearly 100 per cent. more than in 1877. The freight brought up was 8,764 tons, between 40 and 50 per cent. more than in 1877. The wool shipped down was 350 tons, more than 50 per cent. increase over 1877. Many cattle, too, were shipped down.

In 1880-'81, the amount of freight, exclusive of Government freight, carried into Montana by the river was 8,456 tons; the total was 14,654 tons. The amount of wool shipped down was 300 tons.

In 1881-'82, from 20 to 30 steamboats plied on the Missouri, with headquarters at Bismarck, and making from six to seven trips apiece. The business of 1881 was in excess of that of any previous year. Twenty-one boats were running, the largest, the Dacotah, having a freight capacity of 1,400 tons, and the smallest a capacity of 250 tons. These boats carried into Montana 17,380 tons of freight, valued at \$5,214,000. They also transported 1,300 white passengers, 2,400 Indians, 2,400 head of horses, cattle, and sheep.

In 1882-'83, the number of steamboat arrivals and departures at Bismarck was 86 each; at Benton, 40 each. Total shipment of freight from Bismarck was 16,097 tons,

valued at \$4,829,000. Three thousand five hundred other passengers and 1,200 troops were transported. Total exports from Benton, 2,000 tons, valued at \$613,000.

During 1883-'84, there was transported on the upper river 11,797 tons of freight and an unknown number of passengers.

During 1885, the carrying on the upper river above Bismarck was done mainly by the steamers Benton, Batchelor, Helena, and Rosebud. Fifteen round trips were made during the season, with total cargoes of 18,000 tons up-stream and 9,000 tons down-stream; or a grand total of 27,000 tons moved.

Mr. Justus Bragg, the mayor of Bismarck, writes that the river trade from Pierre, Dak., to Fort Benton is rapidly increasing, especially in shipments of wheat and oats, and that above Bismarck several thousand sacks of these grains were left on the bank when navigation closed. The wool shipments are also increasing rapidly.

The steamer General Terry also ran during 1885, but mainly below Bismarck. Chamberlain, Dak., a railroad terminus, is the principal port below Bismarck in the upper river, and between these two points about 15,000 tons were moved during 1885, together with about 500 passengers. This makes the grand total of freight moved on the Upper Missouri, during 1885, 42,000 tons.

Mr. T. C. Power, of Power Bros., owners of the Bismarck and Fort Benton steamers, says the freight carried in 1885 was 50 per cent. greater than that of 1884.

Mr. J. C. McVay, of Yankton, Dak., writes that the General Terry, General Tompkins, and Milwaukee ran during 1885 between Bismarck and Sioux City. The Terry made twenty round trips, averaging 30 passengers each, and handled between 12,000 and 15,000 tons during the season. The General Tompkins handled 7,000 tons of freight.

These steamers have handled all the Government freight for Forts Randall, Sully, Bennett, Meade, and Gates, and for the Indian agencies at Standing Rock, Cheyenne, and other places.

There are thirty or forty towns springing up between Sioux City and Bismarck, and where one boat did the business two years ago it requires 3 boats now.

Rates of insurance on hulls—

	Per cent.
1884.....	13
1885.....	15

During a visit made by me to Bismarck in May, 1886, I talked with pilots, the steamboat company's agents, townspeople, and the depot quartermaster stationed there. The last assured me that 300 tons per month for 5 boats for six months in the year (total 9,000 tons), was a liberal estimate for the trade above Bismarck—that very little bullion and valuable furs were brought down. This reduces the freight on this line to the level in value of the lower-river freight and disposes of the claim of the upper-river trade to greater money value. The evidence of the quartermaster was borne out by the other information.

In this connection I give a compilation of the river trade at Bismarck for the present year to date, which was collected by our assistant engineer in charge of the steamer Missouri, and which I believe to be almost exact.

Powers Line. Above Bismarck to Benton (816 miles). 1886.

Name.	Up.			Down.		
	Date of departure.	Tons.	Remarks.	Date of arrival.	Tons.	Remarks.
Rosebud	Apr. 29	275	Principally to Fort Benton.	May 22	225	Hides, wheat (75 from Benton, 150 from Grinnell's).
Helena	May 5	350	Fort Benton	May 29	*180	Wool and hides, Benton; grain, way points.
Batchelor	May 8	250	Through to Benton .	May 30	†150	Benton and way points.
Rosebud	May 26	275	Principally for Benton.	June 11	100	18 bales of wool; took all freight offered.
Benton	May 31	425	Mostly way freight.	.....	.....	
Total .. . . .	.....	1,575	.....	.....	655	

*Also 30 horses and 15 passengers.

†Also 12 passengers.

All carried a general assortment—corn for Fort Buford, barbed wire, groceries, farm-machinery, oil, bottled beer, and liquors. Returning, wheat from Fort Buford and Grinnell's, dried hides, sheep pelts, empty beer cases, deer and antelope skins, and wool.

Mr. Warren's letter of June 12 says: "Captain Todd, of Rosebud, reported having taken all freight offered. The Rosebud goes out of commission for a time. Not enough freight here to load the Judith" (old N. P. Transfer No. 2).

Evans Line. Below Bismarck to Chamberlain, Dak. (350 miles). 1886.

Name.	Down.			Up.		
	Date of departure.	Tons.	Remarks.	Date of arrival.	Tons.	Remarks.
Terry.....	Apr. 17	125	Standing Rock Agency, 70 miles.	Apr. 20	100	
Do.....	Apr. 21	150	Chamberlain and way.	May 4	100	
Do.....	May 5	125	Way and Pierre, 252 miles.	May 13	100	
Tompkins*				May 7	125	From Pierre and way.
Do.....	May 13	100	Coal Harbor, 800 miles above Bismarck, for wheat.	May 9	100	
Terry.....	May 15	125	Pierre and way			
Do.....	May 26	150	Lumber and shingles (80 for Standing Rock; 70 for Pierre and way).	May 24	80	
Do.....	June 11	80	Pierre and way	June 10	75	Miscellaneous freight.
Total		855			680	

* Tompkins "retired" May 13.

Freights down: Agency and town supplies, lumber and shingles, bottled beer. Up, wheat, hides, "empties," a few passengers.

The steamboats on the Upper Missouri are not in direct competition with railroads, as on the lower river, and perhaps never will be. This relieves the rivermen in that section from the necessity for silence which is felt below, but their statements are to be taken with caution unless proved from other sources.

In my endeavors to get exact data in regard to the 1885 trade, at Bismarck, I was met by the most extravagant and indefinite accounts.

Such facts as I have been able to gather by no means bear out the boast of the upper-river men, that their trade far surpasses, in money value, that of the lower river—the evidence seems to be very much the other way.

As regards the Yellowstone River its trade was considerable, as will be seen from the appendices, until the Northern Pacific Railroad was completed to Glendive in 1883, at which time the trade dwindled to almost nothing. Its chances for revival are slim, as Glendive is not over 100 miles from the mouth of the river.

There will be found appended the annual reports of commercial statistics for the Upper Missouri and Yellowstone rivers, published in the Reports of the Chief of Engineers (Appendices II, III, IV, V, VI, and VII).

ADVANTAGES OF IMPROVEMENT.

As before stated, steamboat agents proved very unwilling to communicate in regard to their business, and it is my belief that for the lower river, the figures already given can be safely increased 25 per cent.

It may seem surprising, that passing, as it does, the granary States of the world, so little grain is transported by the Missouri River. Undoubtedly this is mostly due to the railroads, who are apparently the bugbears of the steamboat agents. It is easy to see how, by discriminations and by differences between local and through tariffs—added to the fact that the country along a railroad is to a great extent vassal to it—railroads can, by their combination, ruin the trade of a single highway.

But it is not in these ways only that railroads have succeeded in practically suppressing Missouri River traffic. The bridges are the obstacles to river trade.

The advantage of a water route lies in the huge cargoes of barges that can be guided by one tow-boat. In a tortuous and swift stream, like the Missouri, a large tow is difficult to handle at all times, but when the dangers are increased by a number of bridge piers not only blocking the highway but giving rise to currents and eddies which not infrequently affect the river channel, the difficulties become so great

that there are, at present, no barges run on the Missouri River. Insurance is too high. Yet, with the proposed improved channel, of 12 feet, barges could largely be used in spite of the bridges.

A curious feature of bridge bills is, that where they are built high they invariably have (so called) long spans, but where there is a draw pier, which is a far greater obstacle than an ordinary high bridge pier, the channel span is no longer than in the other case and has besides, directly in the middle, a formidable obstruction.

The other side of this case is illustrated by the following extract from a letter of Mr. S. W. Cobb, president of the Saint Louis Merchants' Exchange, and taken from the Republican of May 12, 1886, page 7:

* * * * *

"The arrivals and departures of freight and passenger steamers have decreased, and will continue to do so. The fact is due to two causes: The steamers of the past were comparatively smaller. The tonnage or carrying capacity of the steamers of to-day is much greater than that of the steamboats of former years. In addition to this, the building of railways along the rivers has taken the high-classed freight business from the steamboats, and to-day the business of the steamboats is confined to the cheapest class of freight. Wholesale merchants of Saint Louis, with customers along the Missouri River, advise that the retail merchants doing business at river towns which are not reached via rail generally order their goods by boat, if boat is to leave the day or the day following receipt of order; otherwise ship via rail. They are willing to pay the higher rates of freight and cost of transporting by wagons from their nearest rail point rather than to wait two or three days for a boat."

* * * * *

* * * "The arrivals and departures of steamers plying on the * * * Missouri River during the past six years were—

1880	332
1881	250
1882	226
1883	185
1884	211
1885	152

"These figures are taken from the reports of our exchange, and are as near correct as statistics can be. There is but one conclusion to draw, and that is, that the steamboat business is becoming less profitable year by year."

* * * * *

"The Missouri River is practically unobstructed and its traffic has suffered most."

* * * * *

"In the abstract we are justified in the conclusion that the bridges have little to do in destroying river traffic. We ascribe its decay more to rail lines paralleling or tapping the river's territory."

* * * * *

"S. W. COBB,
"President."

But when it is considered that water transportation between the Missouri Valley and Liverpool, for instance, is between 40 and 50 per cent. cheaper than via rail to New York, and that the river *can* be improved so as to be permanently passable for huge fleets, and that the saving in one year would more than pay for said improvements, it seems a pity that the money should not be forthcoming at once.

Table 13 shows the difference in rail and water rates referred to above, and the following extract is very pertinent. It is from a call issued for a convention at Kansas City, in November, 1885, to discuss and urge lower-river improvement. After citing the facts given on page 8, it goes on to say:

"In 1878 the river rate was 5½ cents per bushel for corn and 7½ cents for wheat, including insurance; railroad rate was 8 cents per bushel for corn and 13 cents for wheat. With adequate improvement experience seems to show that grain can be floated from Kansas City to New Orleans for 7 cents per bushel.

"Considering the whole Missouri Valley, and adding 3 cents per bushel for excess of distance to New Orleans from foreign ports over Atlantic coast ports it is believed that 12 cents per bushel will make grain available for transportation from New Orleans at the same rates as from Atlantic ports.

"The rail rates for years past from Missouri Valley points to the Atlantic have not been less than 21 cents on wheat and 16 cents on corn, a difference of 9 and 4 cents in favor of the river route.

"Taking the figures given on page 8, from census of 1880, we have a saving to the producers of over \$22,000,000 by the use of the river route, and this is for one year

only. This amount is more than twenty times the amount asked for by the Missouri River Commission for one year. Supposing a very bad year reduces the crops 66 per cent., there is still a saving of seven times what the Commission ask for the ensuing season."

In order to obtain a depth of 12 feet at low water wide enough for navigation, a result that can be regarded as perfectly practicable, suppose it were necessary to spend as much as \$50,000 per mile, which recent experience almost conclusively shows to be a liberal estimate, the cost of obtaining this channel as far up as Kansas City (386 miles) would be less than \$20,000,000, an amount, as before shown, saved to the producers of the valley in one year.

To carry the same improvement to Sioux City (803 miles) would cost only about \$40,000,000 saved to the producers in two years.

Taking the low figure of \$20,000 per mile as sufficient to build a single-track railroad, we have for two and a half times as much money a highway free to all, and with six hundred times more carrying capacity.

On the other side I get the following from credible authority:

For several years past the commerce of New Orleans has been decreasing.

Grain is nowadays largely carried as ballast, and vessels are not seeking ports merely to carry away grain. The Atlantic ports have this advantage over the Gulf ports, that their imports bring vessels there for other purposes which can and do carry grain back *as ballast and for nothing*.

Consequently, if New Orleans loses its prominence as an importing center, this loss will very materially influence the route of the products of the Mississippi and Missouri River valleys to a market, even supposing both rivers navigable at low water.

Captain Patterson informs me that the lowest available depth in the Missouri River during 1885 was at the Osage, about 3.25 feet.

At Miami, when our fleet came out in November, two steamers rubbed, but one got 5 feet.

At Marthasville there was about 4 feet, and even at the best during the season only about 6 feet.

The information herewith handed to the Commission has been obtained from sources too numerous to mention. But to those who have assisted me, should this reach their eyes, I extend my thanks.

Very respectfully, your obedient servant,

THEO. A. BINGHAM,
First Lieutenant of Engineers,
Secretary Missouri River Commission.

Maj. CHAS. R. SUTER,
Corps of Engineers, U. S. Army,
President Missouri River Commission.

TABLES.

TABLE 1.—*List of steamers plying on Missouri River, in the district of Saint Louis, giving name of vessel, where and when built, date of last inspection, with certain other detailed information, as indicated below.*

Name.	Where built.	Year.	Date of last inspection.	Length.	Breadth.	Depth.
				<i>Ft. In.</i>	<i>Ft. In.</i>	<i>Ft. In.</i>
Aggie	Manchester, Ohio.....	1875	Mar. 24, 1885	92 4	20 4	3 0
A. W. Ewing	Osage City, Mo	1878	Aug. 10, 1885			
Anna	Grafton, Ill	1872	Apr. 14, 1885	101 2	28 2	4 4
C. C. Carroll	Pittsburgh, Pa	1875	Nov. 14, 1884	222 0	36 0	5 5
Dan. B. Hurlbut	Warsaw, Mo	1881	Mar. 16, 1885	62 6	11 0	2 4
Dora	Boerger's Landing, Mo	1882	Nov. 30, 1885	90 9	20 0	3 6
Dakotah	Pittsburgh, Pa	1879	June 13, 1885	252 0	48 8	5 5
David R. Powell	Cincinnati, Ohio	1881	Apr. 13, 1885	258 0	38 0	7 2
Emma	Linn Creek, Mo	1876	Mar. 16, 1885	120 2	24 0	2 9
Frederick	Tuscumbia, Mo	1883	Mar. 3, 1885	94 4	14 3	3 0
Fawn	Hermann, Mo	1880	Aug. 10, 1885	91 9	19 1	3 4
General Meade	Pittsburgh, Pa	1875	Aug. 7, 1885	192 0	30 0	4 3
John L. Ferguson	Grafton, Ill	1876	Nov. 24, 1884	111 6	26 6	3 6
May Bryan	Jeffersonville, Ind	1875	Nov. 6, 1885	115 0	28 0	4 5
Royal	Hermann, Mo	1884	Nov. 6, 1885	86 6	24 0	3 0
Statie Fisher	Jeffersonville, Ind	1875	Mar. 24, 1885	122 0	28 8	4 6
Troy	Hermann, Mo	1881	Aug. 18, 1884			
Vienna*	Plattsmouth, Nebr	1879	Mar. 25, 1885	89 8	24 0	2 8

TABLE 1.—List of vessels plying on Missouri River, &c.—Continued.

Name.	Capacity under tonnage deck.	Capacity between decks.	Total tonnage.	State-rooms.	Berths.	Passengers.			Engines (high pressure).		
						Permitted to carry.	First cabin.	Steerage or deck.	Number.	Diameter of cylinder.	Length of stroke of piston.
	Tons.	Tons.	Tons.	No.	No.	No.	No.	No.		In.	Ft.
Aggie	66.73	21.84	88.57	4	8	28	8	20	2	12	3½
A. W. Ewing			4.00			20		20	2	6	8½
Anna	78.67		78.67						1	6	8½
C. C. Carroll	361.73	210.02	571.75	26	45	70	40	30	2	16	5
Dan. B. Hurlbut	12.92		12.92						2	6	1½
Dora	54.20	26.88	81.08	1	4	20	8	12	2	7	2½
Dakotah	574.90	382.08	956.98	25	50	126	71	55	2	18	7
David R. Powell	586.05	302.69	888.74	30	58	108	58	50	2	22	7
Emma †	76.52		76.52						2	8	2
Frederick	34.49	48.02	82.51		10	15		15	2	7	2½
Fawn	49.73	23.27	73.00	3		50	20	30	2	8	2
General Meade	171.46		171.46	14	30	45	27	18	2	12½	4½
John L. Ferguson †	79.81		79.81						2	11	4
May Bryan	97.40		97.40			50		50	1	16	5
Royal	44.82		44.82			20		20	2	8	2½
Statie Fisher †	106.52		106.52						1	16½	5
Troy			4.00			8		8	1	4	½
Vienna	47.60	25.57	73.17			20		20	2	8	1½

Name.	Boilers.						Licensed to run on—
	Number.	Length.	Diameter.	Kind of material.	When built.	Steam-pressure.	
		Ft.	Ft.			Lbs.	
Aggie	2	16	3	Iron ..	1875	138	Mississippi and tributaries.
A. W. Ewing	1	3	3½	Steel..	1885	125	Do.
Anna	1	3	2	Steel..	1877	100	Do.
C. C. Carroll §	3	26	3½	Iron ..	1875	130	Do.
Dan. B. Hurlbut	1	11½	3½	Steel..	1885	110	From mouth of Osage River to head of navigation.
Dora	1	18	3½	Steel..	1882	120	Mississippi and tributaries.
Dakotah §	4	26	3½	Iron ..	1879	140	Do.
David R. Powell	4	24	3½	Steel..	1885	165	Do.
Emma	1	18	3	Iron ..	1876	120	From mouth of Osage River to head of navigation.
Frederick	1	14	3	Iron ..	1883	150	Mississippi and tributaries.
Fawn	1	14	3½	Iron ..	1877	110	Do.
General Meade	2	20	3	Iron ..	1875	137	Do.
John L. Ferguson	1	16	3½	Iron ..	1864	100	Missouri River between Saint Charles and opposite shore.
May Bryan	1	22	3½	Iron ..	1875	113	Missouri River between Hermann and Saint Charles.
Royal	1	12	3	Steel..	1884	125	Mississippi and tributaries.
Statie Fisher	1	23	3½	Steel..	1875	130	Between Jefferson City and Cedar City.
Troy	1	3½	2½	Iron ..	1882	125	Mississippi and tributaries.
Vienna	1	12	3½	Iron ..	1879	110	Do.

* Rebuilt at Hermann, Mo., 1882.

† Freight boat.

‡ Ferry-boat.

§ Draught (light) 2 feet 2 inches to 3 feet.

TABLE 2.—List of steamers plying on Missouri River, in the district of Upper Missouri, giving name of vessel, where and when built, cost, with certain other detailed information, as indicated below.

Name.	Where built.	Year.	Cost.	Home port.
Benton			\$25,000	
Helena			22,500	
Rosebud			20,000	
Batchelor	Pittsburgh, Pa.	1878	18,500	Bismarck, Dak.
General Terry	do	1878	16,000	Do.
U. S. Joseph			19,000	
General Tompkins				
Denver	Pittsburgh, Pa.	1871		Saint Paul, Minn.
Dr. Burleigh	Wyandotte, Kan.	1866		Yankton, Dak.
Eclipse	Pittsburgh, Pa.	1878		Saint Paul, Minn.
Far West	do	1875		Bismarck, Dak.
General Custer	Alleghany City, Pa.	1877		Do.
Ida Stockdale				Do.
Northern Pacific	Mound City, Ill.	1879		Do.
Northern Pacific, No. 2*	do	1881		Do.
Nellie Peck	Pittsburgh, Pa.	1871		Do.
Union	Brunswick, Mo.	1861		Do.
Undine	Wellsville, Ohio			Do.
Yellowstone	Jeffersonville, Ind.	1876		Do.

Name.	Tonnage.				Engines.			Draught.		Will carry loaded.
	Total.	On three feet draught.	On two feet draught.	To the inch.	Diameter of cyl. inder.	Length of stroke of piston.	Horse-power.	Light.	Loaded.	
	Tons.	Tons.	Tons.	Tons.	In.	Ft.		Ft.	Ft.	Tons.
Benton	394.08	181.90	55	14.00	16	5	325.42	(†)	†3 ⁵ / ₁₂	400
Helena	352.31	205.50	70	13.50	13	4	244.42	(†)	†3 ⁵ / ₁₂	275
Rosebud	286.49	182.10	75	11.90	13	4	283.48	(†)	†3 ⁵ / ₁₂	250
Batchelor	313.00	195.60	90	11.90	13	5	244.42	(†)	†3 ⁵ / ₁₂	275
General Terry	323.15	186.00	75	11.50	13	4	239.98	1½	†4 ⁵ / ₁₂	.....
U. S. Joseph	300.51	180.70	70	12.30			325.42			.....
General Tompkins	300.00				15	4		1½	†4	.....
Denver	180.00									.....
Dr. Burleigh	57.05									.....
Eclipse	295.98				13½	4		(†)	†3 ⁵ / ₁₂	250
Far West	397.81									.....
General Custer	241.34									.....
Ida Stockdale	377.39									.....
Northern Pacific	328.82									.....
Northern Pacific, No. 2*	253.94									.....
Nellie Peck	280.77									.....
Union	72.18									.....
Undine	76.98									.....
Yellowstone	167.27									.....

* Now (June, 1886) the Judith.

† Average.

TABLE 3.—*List of steamers and barges plying on Missouri River, in the district of ———, giving name of vessel, with certain other detailed information, as indicated below.*

Name.	Kind of vessel.	Length.	Breadth.	Engines.		Boilers.		
				Diameter of cylinder.	Length of stroke of piston.	Length.	Diameter.	Kind of material.
		<i>Feet.</i>	<i>Feet.</i>	<i>Inches.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	
Senator	Steamer.							
Cora Ryan	do							
Andrew S. Bennett	do							
John F. Lincoln	do							
President								
Queen No. 2								
Minnona								
Vice-President								
Capitola								
Butt								
J. F. Joy								
Belle of Brownville		110	32	16	4½	18	4	Steel.
White Cloud								
Willie Cade								
Annie Cade								
Minnie Thomas								
Mattie Lee								
Annie Lewis								
Birdie Brent								
Carrie								
Rob Roy								
Plow-Boy								

TABLE 4.—*Population and products of counties in the State of Missouri along the Missouri River.*

Counties.	Population.		Buckwheat.		Indian corn.		Oats.	
	1870.	1880.	1884.	1880.	1884.	1880.	1884.	1880.
			<i>Bush.</i>	<i>Bush.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Andrew	15,137	16,318		184		2,723,745		254,728
Atchison	8,440	14,556		261		4,977,476		176,833
Boone	20,765	25,422		43		2,537,859		291,453
Buchanan	35,109	49,792		65		2,289,204		188,642
Calloway	19,202	23,670		61		2,219,588		438,992
Carroll	17,446	23,274		828		5,290,581		455,826
Chariton	19,136	25,224		1,518		3,565,473		298,011
Clay	15,564	15,572				2,204,376		104,311
Cole	10,292	15,515		130		586,157		110,298
Cooper	20,692	21,596		313		2,389,965		253,289
Franklin	30,098	26,534		76		1,342,997		262,375
Gasconade	10,093	11,153		55		530,732		171,163
Holt	11,652	15,509				3,308,326		174,108
Howard	17,233	18,428		1,039		1,770,520		164,155
Jackson	55,041	82,325		38		3,760,259		178,435
La Fayette	22,623	25,710		93		3,812,887		244,992
Moniteau	11,375	14,346		36		1,355,512		182,098
Montgomery	10,405	16,249		365		1,927,103		551,506
Osage	10,793	11,824		117		598,479		94,530
Platte	17,352	17,366		750		2,038,870		128,410
Ray	18,700	20,190		40		3,490,332		224,116
Saint Charles	21,304	23,065				1,614,960		249,554
Saint Louis*				166		1,893,425		177,773
Saline	21,672	29,911		86		4,836,829		344,695
Warren	9,673	10,806		106		819,500		270,985
Total	249,797	554,355		6,369		61,685,155		5,991,278
Total State	1,721,295	2,168,380	90,937	57,640	190,008,046	202,414,413	31,857,700	20,670,958
Percentage	45 p. ct.	26 p. ct.		11 p. ct.		30 per ct.		29 p. ct.

TABLE 4.—Population and products of counties in the State of Missouri, &c.—Continued.

Counties.	Rye.		Wheat.		Barley.		Value of orchard products.
	1884.	1880.	1884.	1880.	1884.	1880.	1880.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	
Andrew		8,487		291,717		106	\$55,439
Atchison		22,082		329,810		62,589	21,261
Boone		12,431		337,021			28,075
Buchanan		3,311		443,178		513	65,922
Calloway		4,738		234,236			23,001
Carroll		12,926		309,628			19,330
Chariton		11,814		229,061		435	25,390
Clay		7,888		257,887			29,550
Cole		2,379		288,193		232	6,193
Cooper		4,225		516,138		50	18,826
Franklin		1,012		796,726		1,232	17,961
Gasconade		387		343,224		1,642	3,584
Holt		19,260		297,907		8,888	30,921
Howard		12,018		308,934			21,434
Jackson		4,159		449,335		150	36,118
La Fayette		2,781		857,668		1,240	41,014
Moniteau		908		222,339		93	9,161
Montgomery		3,361		193,085		65	23,091
Osage		533		336,879		108	1,914
Platte		4,544		600,654		40	51,854
Ray		6,883		181,646			25,070
Saint Charles		2,084		1,124,518		5,910	41,608
Saint Louis*		6,643		908,838		2,678	97,243
Saline		7,716		858,105			23,645
Warren		760		306,925		1,362	12,865
Total		163,330		11,023,652		87,333	730,470
Total State	545,000	535,426	29,701,687	24,966,627	140,120	123,031	1,812,837
Percentage		31 per ct.		45 per ct.		70 per ct.	40 per ct.

Counties.	Hay.		Irish potatoes.		Sweet potatoes.		Tobacco.		Cotton.
	1870.	1880.	1884.	1880.	1870.	1880.	1884.	1880.	1880.
	<i>Tons.</i>	<i>Tons.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Bales.</i>
Andrew		17,449		58,068		2,034		12,257	
Atchison		16,400		36,235		1,141		12,098	
Boone		11,003		40,482		8,223		40,956	
Buchanan		7,551		94,410		14,279		12,035	
Calloway		12,220		30,922		2,561		570,231	
Carroll		15,580		70,418		3,287		639,325	
Chariton		18,551		65,403		1,245		4,384,924	
Clay		7,357		42,702		4,491		1,243	
Cole		4,035		30,936		1,566		5,430	
Cooper		6,007		38,226		2,696		21,252	
Franklin		4,997		91,212		2,158		94,154	
Gasconade		3,303		38,398		651		8,024	
Holt		11,827		37,964		1,543		18,337	
Howard		8,440		21,385		2,839		604,794	
Jackson		18,182		77,939		22,893		41,986	
La Fayette		11,057		54,655		7,218		16,060	
Moniteau		4,982		23,435		1,244		7,310	
Montgomery		7,635		35,440		1,152		181,761	
Osage		3,330		27,474		600		52,010	5
Platte		7,481		45,571		6,000		6,260	
Ray		15,646		36,796		4,241		701,052	
Saint Charles		7,155		67,241		1,462		52,452	
Saint Louis*		14,603		308,809		78,725		1,388	
Saline		13,800		40,919		3,147		540,175	
Warren		2,767		27,400		849		86,672	
Total		251,358		1,442,440		176,215		8,112,186	5
Total State	615,611	1,077,458	7,020,775	4,189,694	241,253	431,484	12,867,740	12,015,657	20,318
Percentage		23 p. ct.		34 p. ct.		40 p. ct.		68 p. ct.	.02 p. ct.

* City and county separated in 1876.

TABLE 5.—Population and product of counties in the State of Kansas along the Missouri River.

Counties.	Population.			Barley.		
	1880.	1883.	1884.	1880.	1883.	1884.
Atchison	26,668	28,853	29,262	<i>Bushels.</i> 4,280	<i>Bushels.</i> 4,108	<i>Bushels.</i> 10,950
Doniphan	14,257	12,971	13,216	37,526	62,910	40,488
Leavenworth	32,355	32,404	35,381	1,747	2,325	-----
Wyandotte	19,143	25,106	26,775	300	-----	-----
Total	92,423	99,334	104,634	43,853	69,343	51,438
Total State	996,096	1,028,729	1,135,614	300,273	380,989	556,226
Percentage	9 per ct.	10 per ct.	9 per ct.	15 per ct.	18 per ct.	9 per ct.

Counties.	Buckwheat.			Corn.		
	1880.	1883.	1884.	1880.	1883.	1884.
Atchison	<i>Bushels.</i> 279	<i>Bushels.</i> 63	<i>Bushels.</i> -----	<i>Bushels.</i> 2,129,689	<i>Bushels.</i> 2,776,897	<i>Bushels.</i> 2,691,241
Doniphan	58	-----	20	2,475,986	3,238,800	2,913,408
Leavenworth	117	-----	-----	1,785,976	2,087,865	1,973,700
Wyandotte	70	5,805	264	620,640	695,353	654,885
Total	524	5,868	284	7,012,291	8,798,915	8,233,234
Total State	24,421	19,575	12,980	105,729,325	182,084,526	190,870,686
Percentage	2 per ct.	30 per ct.	2 per ct.	7 per ct.	5 per ct.	4 per ct.

Counties.	Oats.			Rye.		
	1880.	1883.	1884.	1880.	1883.	1884.
Atchison	<i>Bushels.</i> 182,372	<i>Bushels.</i> 600,660	<i>Bushels.</i> 291,525	<i>Bushels.</i> 6,868	<i>Bushels.</i> 65,642	<i>Bushels.</i> 34,200
Doniphan	209,185	468,090	349,500	10,536	37,425	12,801
Leavenworth	188,816	636,795	476,338	1,604	15,740	7,404
Wyandotte	57,493	102,320	113,960	1,500	2,599	1,196
Total	637,866	1,807,865	1,231,323	20,508	121,406	55,601
Total State	8,180,385	30,987,864	20,087,294	413,181	5,084,391	6,235,575
Percentage	8 per ct.	6 per ct.	6 per ct.	5 per ct.	2 per ct.	$\frac{1}{10}$ per ct.

Counties.	Wheat.			Hay.		
	1880.	1883.	1884.	1880.	1883.	1884.
Atchison	<i>Bushels.</i> 362,078	<i>Bushels.</i> 339,280	<i>Bushels.</i> 559,756	<i>Tons.</i> 24,924	<i>Tons.</i> 26,873	<i>Tons.</i> 33,171
Doniphan	518,140	680,931	838,981	7,246	28,284	37,067
Leavenworth	418,211	535,686	851,532	19,202	43,709	59,545
Wyandotte	178,599	240,614	266,826	2,573	19,193	18,204
Total	1,477,028	1,796,511	2,517,095	53,945	118,059	148,077
Total State	17,324,141	30,024,936	48,050,431	1,589,897	447,307	645,069
Percentage	9 per ct.	6 per ct.	5 per ct.	3 per ct.	26 per ct.	23 per ct.

Counties.	Irish potatoes.			Sweet potatoes.		
	1880.	1883.	1884.	1880.	1883.	1884.
Atchison	<i>Bushels.</i> 91,116	<i>Bushels.</i> 177,440	<i>Bushels.</i> 205,375	<i>Bushels.</i> 2,654	<i>Bushels.</i> 4,230	<i>Bushels.</i> 2,430
Doniphan	92,204	159,200	145,700	1,008	630	1,575
Leavenworth	98,393	189,520	153,375	12,949	6,840	3,800
Wyandotte	82,919	353,440	257,100	20,011	56,970	11,880
Total	364,632	879,600	761,550	36,622	68,670	19,685
Total State	2,894,198	6,443,600	7,558,354	195,225	368,820	302,950
Percentage	13 per ct.	14 per ct.	10 per ct.	19 per ct.	19 per ct.	6 per ct.

TABLE 5.—*Population and product of counties in the State of Kansas, &c.—Continued.*

Counties.	Tobacco.			Flax.	
	1880.	1883.	1884.	1883.	1884.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Atchison	6,088	40,000	850	57,537	40,456
Doniphan	8,335	1,600	850	600	600
Leavenworth	3,785	1,600	.....	6,230	6,273
Wyandotte	5,150	.....	1,700	80	72
Total	23,358	43,200	3,400	64,447	47,401
Total State	191,669	778,400	173,400	1,159,995	1,036,415
Per centage	12 per ct.	6 per ct.	2 per ct.	6 per ct.	5 per ct.

TABLE 6.—*Population and product of counties in the State of Nebraska along the Missouri River.*

Counties.	Population.		Barley.		Buckwheat.	Indian corn.	
	1870.	1880.	1885.	1880.	1880.	1885.	1880.
			<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Blackbird	31	109	.....	.....	.....	.....	.....
Burt	2,847	6,937	11,480	2,968	207	2,884,190	1,655,484
Cass	8,151	16,683	157,450	108,631	768	6,201,072	4,312,032
Cedar	1,032	2,899	55,300	8,605	297	850,192	217,161
Dakota	2,040	3,213	10,400	1,357	.....	1,026,126	496,465
Dixon	1,345	4,177	21,840	3,197	162	1,020,015	320,608
Douglas	19,982	37,645	24,115	29,809	687	1,719,405	1,696,825
Knox	261	3,666	27,500	5,620	.....	756,096	106,496
Nemaha	7,593	10,451	32,480	35,412	525	5,220,480	2,942,770
Otoe	12,345	15,727	151,823	113,980	238	4,783,115	3,591,019
Richardson	9,780	15,031	42,625	50,737	944	4,971,852	3,931,837
Sarpy	2,913	4,481	13,680	21,796	252	1,826,240	1,584,880
Washington	4,452	8,631	8,480	13,682	1,294	2,897,017	2,326,329
Total	72,772	129,650	557,173	395,794	5,374	34,155,800	23,181,906
Total State	122,993	452,402	4,643,822	1,744,686	17,562	153,506,370	65,450,135
Percentage	59 per ct.	29 per ct.	12 per ct.	23 per ct.	31 per ct.	22 per ct.	35 per ct.

Counties.	Oats.		Rye.		Wheat.	
	1885.	1880.	1885.	1880.	1885.	1880.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Blackbird .....	.....	.....	.....	.....	.....	.....
Burt	286,742	175,356	2,860	6,314	249,551	209,362
Cass	450,697	228,877	74,880	17,759	410,125	394,701
Cedar	515,200	59,722	2,130	61	90,112	20,217
Dakota	136,970	35,964	3,060	137	39,863	83,468
Dixon	260,489	30,706	5,080	1,094	76,927	34,317
Douglas	299,670	213,485	12,850	9,690	49,066	108,730
Knox	205,871	40,805	28,800	1,283	92,481	38,586
Nemaha	376,480	118,606	46,000	11,245	736,208	273,708
Otoe	388,426	197,394	38,394	14,000	210,436	248,364
Richardson	240,912	188,220	95,657	23,377	269,420	372,725
Sarpy	237,115	208,692	438,000	3,124	39,623	105,281
Washington	453,168	259,416	46,500	19,954	230,137	319,969
Total	3,851,740	1,757,243	794,211	107,838	2,493,949	2,209,428
Total State	24,973,203	6,555,875	3,770,390	424,348	19,630,802	13,847,007
Percentage	15 per ct.	27 per ct.	21 per ct.	25 per ct.	13 per ct.	16 per ct.

TABLE 6.—Population and product of counties in the State of Nebraska, &c—Continued.

Counties.	Value of orchard products.	Hay.	Irish potatoes.		Sweet potatoes.	Tobacco.
	1880.	1880.	1885.	1880.	1880.	1880.
		<i>Tons.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Pounds.</i>
Blackbird						
Burt	\$206	28, 223	37, 987	31, 408	71	1, 835
Cass	6, 974	21, 688	132, 126	76, 502	517	3, 925
Cedar	20	19, 163	42, 790	23, 747		380
Dakota	1, 089	21, 091	31, 602	33, 654	38	
Dixon	25	21, 100	38, 813	27, 563		300
Douglas	3, 412	28, 206	145, 718	87, 462	2, 230	1, 700
Knox	106	8, 214	74, 430	20, 084		
Nemaha	13, 995	13, 650	59, 948	38, 286	197	2, 100
Otoe	15, 529	23, 299	124, 867	84, 642	420	10, 065
Richardson	9, 328	24, 695	92, 629	58, 723	369	4, 861
Sarpy	1, 435	12, 554	53, 723	53, 950	256	
Washington	2, 782	31, 802	92, 421	72, 645	292	944
Total	54, 901	253, 685	927, 054	608, 666	4, 390	26, 110
Total State	72, 244	785, 433	4, 531, 241	2, 150, 898	13, 628	57, 979
Percentage	76 per ct.	34 per ct.	20 per ct.	28 per ct.	3 per ct.	45 per ct.

TABLE 7.—Population and product of counties in Iowa and Montana along the Missouri River.

STATE OF IOWA.

Counties.	Population.		Barley.	Buck- wheat.	Indian corn.	Oats.
	1870.	1880.	1880.	1880.	1880.	1880.
			<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Fremont	11, 174	17, 652	79, 258	515	5, 875, 156	206, 150
Harrison	8, 931	16, 649	3, 910	803	4, 363, 991	156, 725
Mills	8, 718	14, 137	32, 156	528	4, 192, 319	230, 171
Monona	3, 654	9, 055	3, 395	207	2, 320, 332	101, 967
Pottawattamie	16, 893	39, 850	73, 325	1, 391	7, 350, 176	370, 788
Woodbury	6, 172	14, 996	3, 115	250	1, 458, 939	41, 286
Total river counties ..	55, 542	112, 339	195, 159	3, 694	25, 560, 913	1, 107, 087
Total State	1, 194, 020	1, 624, 615	4, 022, 588	166, 895	275, 014, 247	50, 610, 591
Percentage	5 per cent.	7 per cent.	5 per cent.	2 per cent.	9 per cent.	2 per cent.

Counties.	Rye.	Wheat.	Value of orchard products.	Hay.	Irish potatoes.	Sweet potatoes.	Tobacco.
	1880.	1880.	1880.	1880.	1880.	1880.	1880.
	<i>Bushels.</i>	<i>Bushels.</i>		<i>Tons.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Pounds.</i>
Fremont	24, 298	299, 503	\$17, 265	20, 633	62, 345	1, 008	6, 699
Harrison	8, 271	240, 093	2, 360	43, 933	63, 472	513	2, 805
Mills	4, 417	232, 834	10, 470	18, 691	71, 401	663	1, 315
Monona	2, 431	126, 307	1, 267	33, 542	40, 300		1, 630
Pottawattamie	13, 984	699, 324	5, 726	54, 800	173, 371	1, 553	2, 485
Woodbury	371	57, 469	398	52, 192	46, 892		
Total river counties ..	53, 772	1, 655, 530	37, 486	223, 791	457, 781	3, 737	14, 934
Total State	1, 518, 605	31, 154, 205	1, 494, 365	3, 613, 941	9, 962, 537	122, 368	420, 477
Percentage	4 p. ct.	5 p. ct.	3 p. ct.	6 p. ct.	5 p. ct.	3 p. ct.	4 p. ct.

TABLE 7.—Population and product of counties in Iowa, &c.—Continued.

TERRITORY OF MONTANA.

Counties.	Population.		Barley.		Buckwheat.		Indian corn.	
	1870.	1880.	1883.	1880.	1883.	1880.	1883.	1880.
			<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>
Choteau	517	3,058	1,405	244			1,005	
Dawson	177	180					2,760	
Gallatin	1,578	3,643	18,933	8,586		230		
Jefferson	1,531	2,464	5,745	5,696				135
Lewis and Clark	5,040	6,521	6,271	5,958	20	107	925	1,210
Meagher		1,387	6,696	6,166	108	40	30	120
Total river counties	11,586	17,253	39,050	26,650	128	377	4,720	1,465
Total Territory	20,595	39,159	62,589	39,970	328	437	6,604	5,649
Percentage	56 p. ct.	44 p. ct.	62 p. ct.	67 p. ct.	39 p. ct.	86 p. ct.	71 p. ct.	26 p. ct.

Counties.	Oats.	Rye.	Wheat.		Hay.	Irish potatoes.	
	1883.	1883.	1883.	1880.	1880.	1883.	1880.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Tons.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Choteau	205,160	170	7,805	2,401	1,682	19,762	9,922
Dawson	2,802	80	845		265	5,655	
Gallatin	547,986		168,959	151,513	7,159	60,702	16,200
Jefferson	70,686	25	21,347	15,437	4,135	22,060	13,928
Lewis and Clark	79,960	240	52,782	30,531	9,119	93,755	41,999
Meagher	115,225		57,893	79,502	5,948	15,615	15,905
Total river counties	1,039,819	515	309,631	279,384	28,308	217,549	97,954
Total Territory	2,023,992	2,215	556,076	469,688	63,937	412,681	228,702
Percentage	51 p. ct.	23 p. ct.	55 p. ct.	59 p. ct.	44 p. ct.	53 p. ct.	43 p. ct.

TABLE 8.—Population and product of counties in the Territory of Dakota along the Missouri River.

Counties.	Population.		Barley.		Buckwheat.		Corn.	
	1880.	1885.	1880.	1885.	1880.	1885.	1880.	1885.
			<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
Bonhomme	5,468	7,449	22,542	2,568		215	140,079	417,933
Bozeman		162						
Brulé	238	7,524		9,987		702	3,370	170,836
Buffalo	63	864		80		20	430	12,133
Burleigh	3,246	5,354		5,439	55	60	9,334	18,630
Campbell	50	1,199						6,250
Charles Mix	407	4,022	900	3,595		948	9,695	324,563
Clay	5,001	6,201	5,008	32,684	223	437	375,837	908,743
Emmons	38	1,046		1,115			900	31,188
Hughes	268	5,268		2,147		1,256	1,160	57,018
Hyde		2,175		535		17		8,499
Mercer		254		256				4,593
Morton	200	5,873		4,534		292		50,228
Montraille	13	37						
Potter		2,336		218		222	400	28,020
Stevens	247	55						
Tully	296	3,233		774		40		27,479
Union	6,813	8,017	2,344	47,480	97	1,122	305,189	1,279,050
Walworth	46	1,412		160		105	1,850	10,010
Williams	15	36						
Yankton	8,390	9,404	11,127	8,853	61	391	220,953	418,393
Total	30,799	71,921	41,921	120,425	436	5,827	1,069,197	3,793,566
Total for Territory	133,392	415,610	277,424	2,170,059	2,521	51,466	2,000,864	7,800,593
Percentage	23 p. ct.	17 p. ct.	15 p. ct.	6 p. ct.	18 p. ct.	11 p. ct.	53 p. ct.	49 p. ct.

TABLE 8.—Population and product of counties in Dakota, &c.—Continued.

Counties.	Oats.		Rye.		Wheat.		Value of orchard products.	
	1880.	1885.	1880.	1885.	1880.	1885.	1880.	1885.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>		
Bonhomme	123,777	296,568	2,449	3,145	122,048	64,838	\$120	\$235
Brulé		247,445		1,242		264,550		
Buffalo	600	5,608			240	4,436		
Burleigh	66,124	317,275				259,697		
Campbell		4,975				100		
Charles Mix		10,685		981	66	52,396		60
Clay	50,645	360,114	103	7,330	8,335	71,787	16	636
Emmons	160	41,465				8,773		1,500
Hughes		70,630		890		68,301		
Hyde		23,905		30		20,975		
Mercer		10,800				3,197		
Morton		99,252		430		29,681		
Potter	600	21,237		55		6,300		
Tully		36,740		484		36,646		
Union	30,672	405,097	1,626	9,199	13,023	131,779		256
Walworth		11,766		165		3,906		
Yankton	120,644	281,790	590	2,071	76,741	81,349	20	200
Total	393,222	2,245,352	4,768	26,022	220,453	1,108,711	156	2,887
Total for Territory	2,217,132	22,970,098	24,359	196,750	2,830,289	38,166,413	156	3,921
Percentage	18 p. ct.	10 p. ct.	20 p. ct.	13 p. ct.	8 p. ct.	3 p. ct.	100 p. ct.	74 p. ct.

Counties.	Hay.		Irish potatoes.		Wool.	Flax.
	1880.	1885.	1880.	1885.	1885.	1885.
	<i>Tons.</i>	<i>Tons.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Pounds.</i>	<i>Bushels.</i>
Bonhomme	17,433	19,520	21,105	23,529	32,915	161,465
Bozeman	710		1,230			
Brulé	453	9,814	2,225	30,710	4,548	22,393
Buffalo	220	1,526	25	3,217	128	1,979
Burleigh	4,120	6,952	57,635	84,440	9,723	20
Campbell	400	2,756		4,071	24	160
Charles Mix	720	11,228	1,734	36,542	4,268	56,381
Clay	35,812	62,347	44,450	46,335	9,971	26,471
Emmons	380	8,568	1,725	19,230	16,260	112
Hughes	150	7,718	42	29,764	267	12,792
Hyde		3,706		7,653	408	7,885
Mercer		336		5,095		
Morton		4,200		97,525	1,508	276
Potter		4,157		10,342	791	1,667
Stevens	425		5,185			
Tully		5,912		15,565	2,080	5,810
Union	39,172	73,795	34,759	57,379	9,072	7,988
Walworth	1,380	15,240	900	7,253	2,102	16
Yankton	27,966	46,225	41,042	40,524	50,070	160,965
Total	129,341	284,000	212,057	519,174	144,135	466,380
Total for Territory	308,036	1,527,978	664,086	3,868,860	882,689	2,282,788
Percentage	42 p. ct.	19 p. ct.	32 p. ct.	13 p. ct.	16 p. ct.	20 p. ct.

TABLE 9.—*Missouri River trade.*

Years.	Received at Saint Louis.			[Shipped from Saint Louis.		
	By river.	By rail.	Per cent. by river.	By river.	By rail.	Per cent. by river.
	<i>Tons.</i>	<i>Tons.</i>		<i>Tons.</i>	<i>Tons.</i>	
1874.....	44, 830	3, 165, 093	.....	20, 390	1, 230, 676	.....
1875.....	30, 160	3, 232, 770	.....	25, 100	1, 301, 450	.....
1876.....	50, 345	3, 431, 220	.....	19, 360	1, 659, 950	.....
1877.....	49, 645	3, 464, 388	.....	23, 185	1, 652, 850	.....
1878.....	56, 040	3, 785, 307	.....	22, 465	1, 880, 559	.....
1879.....	33, 800	4, 663, 078	.....	15, 040	2, 285, 716	.....
1880.....	59, 025	6, 096, 524	.....	16, 415	2, 755, 680	.....
1881.....	39, 385	6, 750, 575	0. 6	13, 720	3, 462, 912	0. 3
1882.....	34, 900	6, 900, 622	0. 5	11, 980	3, 749, 160	0. 3
1883.....	36, 105	6, 940, 723	0. 5	18, 990	3, 468, 216	0. 5
1884.....	29, 860	6, 440, 787	0. 5	15, 285	3, 611, 419	0. 4
1885.....	16, 875	6, 764, 168	0. 2	10, 330	3, 537, 133	0. 3

TABLE 10.—*Annual statement of trade and commerce of Saint Louis for 1884 (Merchants' Exchange).*

[Freight received at Saint Louis, Mo., in eleven years.]

Years.	Missouri Pacific Rail- road (main line).	Wabash, Saint Louis and Pacific Railroad (west branch).	Chicago, Alton and Saint Louis Railroad (Missouri di- vision).	Missouri River.	Missouri River (rafts, &c., lumber, logs, and shingles).	Percentage by river.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Per cent.</i>
1875.....	229, 447	238, 866	.....	30, 160	.....	6. 4
1876.....	416, 415	333, 757	.....	50, 345	.....	6. 7
1877.....	354, 513	318, 768	.....	49, 645	.....	7. 4
1878.....	413, 302	395, 049	.....	56, 040	.....	6. 9
1879.....	425, 840	366, 797	143, 313	33, 800	.....	3. 6
1880.....	850, 434	530, 527	179, 772	59, 025	.....	3. 8
1881.....	907, 467	447, 449	154, 248	39, 385	.....	2. 6
1882.....	962, 517	319, 905	92, 088	34, 900	.....	2. 5
1883.....	1, 092, 591	429, 494	135, 688	33, 770	2, 335	2. 2
1884.....	631, 953	304, 885	108, 522	28, 525	1, 335	2. 8
1885.....	548, 779	392, 202	83, 020	16, 875	2, 195	1. 9

[Freight shipped from Saint Louis, Mo., in eleven years.]

1875.....	151, 890	116, 674	.....	25, 100	.....	9. 3
1876.....	203, 169	134, 999	.....	19, 360	.....	5. 7
1877.....	202, 966	137, 394	.....	23, 185	.....	6. 8
1878.....	196, 955	153, 294	.....	22, 465	.....	6. 4
1879.....	272, 250	197, 219	45, 596	15, 040	.....	2. 9
1880.....	407, 030	209, 604	62, 346	16, 415	.....	2. 4
1881.....	709, 814	254, 902	72, 393	13, 720	.....	2. 0
1882.....	678, 706	246, 049	90, 990	11, 980	.....	2. 0
1883.....	563, 398	263, 872	67, 036	18, 990	.....	2. 1
1884.....	330, 481	217, 409	81, 827	15, 285	.....	2. 4
1885.....	378, 550	213, 425	82, 494	17, 130	.....	2. 5

TABLE 11.—Receipts at Saint Louis from the West and shipment to the West by rail and Missouri River in 1885.

RECEIPTS.

Articles.	Designation.	By rail.				Missouri River.	Percentage by river.
		Chicago and Alton railroad (Missouri division).	Missouri Pacific railroad.	Wabash, Saint Louis and Pacific railroad (western division).	Total by rail.		
Provisions:							<i>P. ct.</i>
Pork	Barrels			390	390	540	138.46
Hams	Pounds	648,430	1,631,834	1,870,510	4,150,774	11,115	0.27
Meats	do	1,616,130	8,071,518	12,601,373	22,289,021	64,705	0.29
Lard	do	141,970	2,205,241	2,493,729	4,840,940	63,700	1.32
Live stock:							
Cattle	Head	13,631	157,355	59,554	230,540	250	0.11
Hogs	do	98,100	346,271	453,545	897,916	7,727	0.86
Sheep	do	22,730	96,767	86,332	205,829	954	0.46
Horses and mules	do	2,369	4,869	9,934	17,172	28	0.16
Cereals:							
Flour	Barrels	27,820	166,998	81,444	276,262	3,058	1.10
Wheat	Sacks	658	302,280	29,343	332,281	108,554	
	Bushels	349,150	1,428,950	908,900			
Corn	Sacks	216	69,189	6,510	75,915	54,382	
	Bushels	502,700	7,988,100	6,925,200			
Corn meal	Barrels	400	978				
Oats	Sacks		1,986	19,109	21,095	3,508	
	Bushels	89,900	109,800	1,773,800			
Rye	Sacks		48	575	623	81	
	Bushels	20,350	454,850	105,600			
Barley	Sacks		420	614			
	Bushels	13,200	138,000	131,400			
Rice				40			
Wines and liquors	Barrels	1	2,419	298	2,718	62	2.28
	Box and cases		339	1			
Farm and dairy products:							
Potatoes	Bbls. and sacks	6	2,282	737	3,025	436	
	Bushels		16,200	23,400			
Onions	Sacks and bbls.		240	616	856	96	11.21
Beans	do	20	585	1,768	2,373	58	2.44
Castor beans	Sacks	168	323	45	536	10	1.87
	Bushels, bulk	2,000	9,500				
Flaxseed	Sacks	1,394	2,848	4,450	8,692	2	
	Bushels, bulk	22,000	228,500	21,000			
Hay	Tons	780	5,794	13,266			
Tobacco	Hogsheads	830	372	6,746	7,948	456	5.74
	Packages	2,954	534	28,522	32,010	7	0.02
Hops	Bales		60	260			
Molasses	Barrels	479	7,306	65			
	Kegs		2,815				
Butter	Pounds	9,400	298,076	295,446	602,922	9,650	1.60
Cheese	Boxes			3,068			
Eggs	Packages	263	23,443	6,709	30,415	3,713	12.21
Apples	Barrels	536	15,782	12,885	29,203	1,760	6.03
Fruit, dried	Packages	1,744	2,221	638	4,603	429	9.32
Minerals:							
Iron and steel	Tons	307	20	1,889			
Lead, pig	Pigs	198,365	150,270	80,763			
Pig-iron	Tons		60				
Coal	do		750	349			
	Cars	26	94	165			
Lumber	M feet					399	
Ship chandlery:							
Hemp	Bales	40	44	111	195	21	10.77
Flax, tow				432			
Tallow	Pounds	360,870	1,267,856	489,883	2,118,609	379,609	17.92
Grease	do	175,880	414,049	614,552	1,204,481	3,600	0.30
Peltries and furs:							
Hides	Pounds	1,111,478	2,888,869	860,864	4,861,211	22,195	0.46
Wool	do	1,542,358	2,635,027	1,813,976	5,991,361	48,240	0.81
Peltries and furs	Packages	689	5,927	1,596	8,212	441	5.37

TABLE 11.—Receipts at Saint Louis from the West and shipments to the West, &c.—Cont'd.

SHIPMENTS.

Articles.	Designation.	By rail.				Missouri River.	Percentage by river.
		Chicago and Alton Railroad (Missouri division).	Missouri Pacific Railroad.	Wabash, Saint Louis and Pacific Railroad (western division).	Total by rail.		
P. ct.							
Provisions:							
Pork.....	Barrels.....		274			7	
Hams.....	Pounds.....	28,986	131,345				
Meats.....	do.....	38,870	186,661			750	
Lard.....	do.....	23,060	150,871	34,783			
Live stock:							
Cattle.....	Head.....	442	736	4,823			
Hogs.....	do.....	5	71	66			
Sheep.....	do.....	100	127	1,390			
Horses and mules.....	do.....	378	1,726	1,535			
Cereals:							
Flour.....	Barrels.....	277	2,888	635			
Wheat.....	Sacks.....		561				
	Bushels.....	1,585	5,027	4,550			
Corn.....	Sacks.....		174				
	Bushels.....		1,250				
Corn meal.....	Barrels.....		65				
Oats.....	Sacks.....		2,876				
	Bushels.....	800	10,720	2,470			
Barley.....	Sacks.....		10	189			
	Bushels.....		16,660				
Rice.....	Packages.....	856	983	1,766			
Malt.....	Sacks.....	3,731	8,285	9,935			
Liquors:							
Whiskies and high wines.....	Barrels.....	7,845	18,526	8,882			
Beer and ale.....	Packages.....	34,044	197,195	154,437			
Farm and dairy products:							
Potatoes.....	Sacks.....	2,253	10,240	13,215			
	Bushels.....	2,296	4,384	950			
Onions.....	Packages.....	287	1,064	175			
Beans.....	do.....	966	1,608	579			
Flaxseed.....	Sacks.....		1,350				
	Bush. (bulk).....		2,500				
Hay.....	Tons.....		226	22			
Tobacco.....	Hogsheads.....	311	19	707			
Tobacco, manufac.....	Packages.....	10,631	76,002	44,045			
Molasses.....	Barrels.....	558	1,431	1,330			
	Kegs.....	448	1,161	179			
Butter.....	Pounds.....	1,490	5,040				
Cheese.....	Boxes.....	1,254	3,591	727			
Eggs.....	Packages.....	39					
Apples.....	Barrels.....	3,414	4,793	3,407			
Fruit, dried.....	Packages.....	3,380	7,782	1,580			
Minerals:							
Lead, pig.....	Pigs.....	49	1,020	4,022			
White lead.....	Pounds.....	639,260	2,165,865	558,144			
Pig-iron.....	Tons.....	681	5,773	1,115			
Coal.....	do.....	12,488	177,727	14,238			
Lumber.....	M feet.....	2,328	47,960	19,781			
Ship chandlery:							
Bagging.....	Rolls.....	39		35			
Soap.....	Boxes.....	3,484	19,212	3,132			
Tallow.....	Pounds.....	24,500	62,575	40,000			
Grease.....	do.....	38,390					
Peltries and furs:							
Hides.....	do.....		269,977	23,000			
Wool.....	do.....	12,510	36,915	308,700			

TABLE 12.—*Statistics of Leavenworth, Kans., Saint Joseph, Mo., and Omaha, Nebr.*

LEAVENWORTH, KANS., 1884.

Articles.	Received.	Shipped.
Wheat	1, 800, 000	1, 500, 000
Corn	1, 231, 934	1, 231, 934
Oats	600, 395	600, 395
Rye	411, 295	.....
Flaxseed	75, 000	.....
Apples .....	.....	100, 000

Apples made into cider, about..... bushels.. 25, 000
 Apples, dried

..... pounds.. 15, 000

Mill using daily 500 bushels flaxseed, making daily 1,300 gallons linseed oil and 18,000 pounds linseed meal.

Factories of organs, candies, coopering (1,000 barrels a day), canning (over 1,500,000 in 1884), stove works, flouring mills.

OMAHA, NEBR., 1883.

[Missouri Pacific Railroad.]

Articles.	Car-loads.	
	Received.	Shipped.
Wheat and flax	57	154
Corn	78	203
Rye	4	1
Barley	10	5
Oats	7	50
Cattle and hogs	82	7
Horses and sheep	166	41
Flour	104	4
Lumber	1, 087	367
Miscellaneous	5, 915	2, 644

[Union Pacific Railroad.]

	Car-load shipments.		
	1881.	1882.	1883.
Cattle	304	590	1, 366
Hogs	57	59	119
Horses	100	215	275
Sheep	40	39	89

[B. & M. R. R., 1883.]

Articles.	Car-loads.	
	Received.	Shipped.
Wheat and flax	203	1
Corn	61	3
Rye	1	1
Barley	34	.....
Oats	19	1
Cattle and hogs	532	17
Horses and sheep	73	3
Lumber	295	466
Lime	338	29
Miscellaneous	10, 608	3, 445

TABLE 12.—Statistics of Leavenworth, Kans., Saint Joseph, Mo., &c.—Continued.

[Miscellaneous trade.]

	1882.	1883.
Smelting works, freight handled	77, 248	110, 119
Bluestone product	do.	875
Linseed oil, daily capacity:		
Flaxseed	bushels.	2, 000
Flaxseed oil	gallons.	4, 000
Flaxseed oil cake	pounds.	80, 000
Crackers (daily capacity), flour	barrels.	425
Brick, made		35, 000, 000
Nails, yearly capacity	kegs.	100, 000

SAINT JOSEPH, MO.

	Car loads of stock received at Union Stock Yards.		Estimated number of heads.	
	1885.	1884.	1885.	1884.
Cattle	762	826	15, 740	16, 520
Hogs	2, 447	2, 298	146, 820	137, 880
Sheep	51	43	5, 100	4, 300
Horses and mules	437	361	6, 992	5, 776
Total	3, 662	3, 994	174, 152	164, 476

[Saint Joseph manufacturing interests, 1885.]

Kind of manufacture.	Capital employed.	Number of hands employed.	Aggregate of wages paid.	Value of products.
Refineries	\$225, 000	45	\$20, 000	\$180, 000
Woolen mills	450, 000	100	50, 000	760, 720
Flour and feed mills	600, 000	200	70, 000	1, 500, 100
Breweries and bottling	400, 000	175	75, 000	500, 000
Foundries, machine and car shops	1, 000, 000	550	305, 000	1, 750, 000
Furniture and show-cases	275, 000	250	200, 000	850, 000
Brick-yards	200, 000	250	100, 000	375, 000
Contracting	220, 000	1, 150	300, 000	1, 500, 000
Stone and marble yards	100, 000	300	45, 000	450, 000
Harness and saddlery	160, 000	120	50, 000	260, 000
Printing, publishing, and binding	200, 000	325	150, 000	350, 000
Planing-mills	65, 000	130	80, 000	445, 000
Plows and implements	45, 000	75	40, 000	240, 000
Boots and shoes	80, 000	160	60, 000	240, 000
Canning, drying, and preserving	80, 000	175	40, 000	85, 000
Slaughtering and packing	1, 600, 000	260	70, 000	1, 400, 000
Miscellaneous	1, 000, 000	1, 500	70, 000	3, 175, 000
Carriage and blacksmith	85, 000	180	60, 000	200, 000
Total	6, 785, 000	5, 945	1, 785, 000	14, 260, 820

[From statement of wholesale and retail trade of the year from September, 1884, to October, 1885.]

Articles.	Aggregate sales.	Articles.	Aggregate sales.
Dry goods	\$10, 155, 000	Flour, feed, and mill-stuffs	\$2, 750, 150
Groceries	12, 600, 000	Wool, hides, tallow, and furs	1, 170, 000
Hardware, iron and cutlery	4, 510, 000	Coal	1, 725, 000
Lumber and building materials	4, 120, 000	Leather and findings	338, 000
Grain and produce	5, 625, 000		
Live stock	4, 250, 000	Total	49, 705, 150
Machinery and agricultural imple- ments	2, 462, 000		

TABLE 12.—*Statistics of Leavenworth, Kans., Saint Joseph, Mo., &c.—Continued.*

[Grain purchased during the same period.]

Articles.	Aggregate quantity.	Articles.	Aggregate quantity.
	<i>Bushels.</i>		<i>Bushels.</i>
Wheat.....	430,000	Barley.....	240,000
Corn.....	4,100,000	Total.....	5,350,000
Rye.....	260,000		
Oats.....	320,000		

TABLE 13.—*Average rates of freight on wheat in cents per bushel.*

[Steamer from Saint Louis to Liverpool via New Orleans.]

Months.	Saint Louis to New Orleans.			New Orleans to Liverpool.			Total Saint Louis to Liverpool.		
	1883.	1884.	1885.	1883.	1884.	1885.	1883.	1884.	1885.
January.....	9	6½	-----	16	9	10	25	15½	-----
February.....	9	6½	-----	15½	6	10	24½	12½	-----
March.....	7	6½	7	15½	7	10½	22½	13½	17½
April.....	5½	6½	6	13	6	10½	18½	12½	16½
May.....	5½	5½	5½	11	7½	12	16½	13	17½
June.....	5½	5½	5½	11	5½	-----	16½	11	-----
July.....	5½	5½	5½	12	8	4	17½	13½	9½
August.....	5½	7	6½	14	13½	7½	19½	20½	14
September.....	6½	7	6½	11	11	8½	17½	18	15
October.....	7½	7	6½	10½	4	8½	17½	11	15
November.....	6½	7½	7½	13½	9	8½	20½	16½	15
December.....	6½	7½	7½	12	10	9	18½	17½	16½
Average.....	-----	-----	-----	-----	-----	-----	18½	14½	*14

[Saint Louis to Liverpool via rail to New York.]

Months.	East Saint Louis to New York.			New York to Liverpool.			Total Saint Louis to Liverpool.		
	1883.	1884.	1885.	1883.	1884.	1885.	1883.	1884.	1885.
January.....	21	20	17 ⁴ / ₁₀	14	5½	9	35	25½	26.40
February.....	21	16½	17 ⁴ / ₁₀	13	5	6½	34	21½	23.90
March.....	21	12	17 ⁴ / ₁₀	7½	3½	7	28½	15½	24.40
April.....	21	12	17 ⁴ / ₁₀	7	3 ⁵⁵ / ₁₀₀	7½	28	15 ⁵⁵ / ₁₀₀	25.05
May.....	17 ⁴ / ₁₀	12	17 ⁴ / ₁₀	5½	2½	4½	22 ³ / ₁₀	14½	22.15
June.....	17 ⁴ / ₁₀	12	9	5½	6	4½	22 ³ / ₁₀	18	13.75
July.....	17 ⁴ / ₁₀	15½	13 ⁸ / ₁₀	8	9	4½	25 ⁹ / ₁₀	24½	18.13
August.....	17 ⁴ / ₁₀	15½	11 ⁴ / ₁₀	7	9½	5½	24 ⁴ / ₁₀	24 ⁷ / ₁₂	16.55
September.....	17 ⁴ / ₁₀	15½	6	7	6	7½	24 ⁴ / ₁₀	21½	13.60
October.....	17 ⁴ / ₁₀	15½	13 ⁸ / ₁₀	9	8	5½	26 ⁴ / ₁₀	23½	19.00
November.....	17 ⁴ / ₁₀	15½	13 ⁸ / ₁₀	9	11½	5½	26 ⁴ / ₁₀	27 ⁷ / ₁₀	19.15
December.....	20 ⁴ / ₁₀	15½	17 ⁴ / ₁₀	5½	13½	6½	25 ⁹ / ₁₀	29½	23.90
Average.....	-----	-----	-----	-----	-----	-----	27 ¹ / ₁₀	21 ⁹ / ₁₀	20½

* For nine months.

Transfer at New Orleans ½ cent per bushel; insurance ¾ to 1 per cent.

I.

[Extract from Report of the Chief of Engineers 1868, page 622.]

OFFICE WESTERN RIVER IMPROVEMENTS,
Cincinnati, Ohio, December 3, 1867.

COLONEL: In continuation of the duties designated in your order dated June 24, 1867, I have the honor to submit the following report:

* * * * *

COMMERCE.

The commerce of the Missouri, although not equal to the natural demands of the country dependent upon it, is steadily increasing in importance, and will continue its growth to meet the necessities of our northern Territories as their resources are developed and navigation is rendered more safe and speedy. At present the commerce above the rapids is concentrated at the two ports, Camp Cooke and Fort Benton, the former receiving only army and sutler's supplies for the military post established there, and the latter receiving supplies for the mining country of Montana for the military posts of Fort Benton and Sun River, and for the northern Indians.

During the season of 1867 43 steamboats engaged in this trade cleared from the port of Saint Louis; of these one made 2 round trips. Two on the second trip were unable to pass Dauphin's Rapids, and left their freight at Cow Island; one on the first trip could get no higher than Fort Hawley, and the steamer Imperial on the first trip discharged freight at Cow Island, and is now on her return, last reported November 20 at Saint Joseph, with 300 passengers and a large consignment of specie. The J. H. Prover was wrecked at Point au Poche, the Nora sunk near De Soto, the Deer Lodge had her shaft broken by drift near Decatur, and gave up her second trip.

Of the freight carried by this fleet 2,095 tons belonged to Government, 5,966 to private parties, making a total of 8,061 tons, dependent on the navigation of the rapids section of the river. Of the return cargoes I can give but little information. Hides, peltries, gold, silver, and copper are the only exports, and all seek river transportation.

It is safe to say that five-sixths of the mining products of Montana reach the East by way of Missouri River. The passenger traffic is also an item of considerable importance, and it is estimated that 10,000 persons during this season have taken this route to and from Montana, at an average rate of \$150 each, making a total of \$1,500,000 for payment of passages.

It is not expected that the river will in the future be the passenger route to Montana, for the reason that the trip can be made in much shorter time by the way of the Western Pacific Railroad and stage to the mines. Indian troubles may influence a few travelers, but the great majority will naturally seek the shortest and most speedy route, with its attendant risks. Travel from Montana in the spring and summer will, however, be by the river, the boats then being able to compete successfully in point of time with the stage route, besides furnishing a safer and more pleasant mode of traveling.

Nor does the river at present enjoy a monopoly of the Montana trade, owing to the high rate of river transportation, the present uncertainty of navigation, and insufficient number of boats employed. It has been found necessary and economical to transport by wagon trains from Utah, California, and the terminus of the Union Pacific Railroad a large proportion of the breadstuffs and sundries consumed in the Territory.

By removing difficulties of navigation this trade will naturally be directed to the East. Rates will be reduced. A large fleet employed on the river and the prosperity of Montana and of the river interest, mutually dependent, will rapidly increase.

In view of this mutual dependence projects have been set afoot for railroad communication between Helena, the capital of Montana, and the river. A railroad from the mouth of the Muscle Shell River is deemed feasible, thus cutting off the rapids.

With the rapids improved, a railroad from Fort Benton would be desirable. Montana is a thrifty, growing country, but its growth is greatly retarded by difficulty of communication. Even should it be attempted to overcome the difficulty by a railroad from the Muscle Shell or a branch from the Union Pacific Railroad, years will necessarily elapse before such roads can be made of use, and in the mean time the Missouri River must retain its importance.

Taking such views of the case, I esteem the improvement of the rapids of the Upper Missouri not only a necessity, but a duty the Government owes to a Territory that promises to be one of the most flourishing States, and a portion of that mountain belt whose settlement will do more towards settling the Indian question than can be done by a powerful and expensive army.

In the middle section of the Missouri the ports are only at military or fur-trading posts, and are enumerated as follows: Fort Thompson, New Fort Sully, Fort Rice, Fort Stevenson, Fort Berthold, Fort Buford, and Fort Hawley. Consignments to these posts are either military supplies, Indian annuities, or the goods of fur-traders. During the season of 1867 twenty-eight cargoes were cleared from Saint Louis for these several points, amounting to 8,094 tons, of which Government shipped 5,832 tons and private parties 2,262 tons. The receipts from these ports are hides, horns, and peltries from the fur companies.

The number of passengers, though not great, is yet considerable, mostly officers and soldiers, coming from and returning to their posts.

The lower section of the river, that is, from Saint Louis to Fort Randall, has, of necessity, from the fact of its winding through a fertile and well-populated country, the greatest commercial value, besides carrying all the commerce of the upper river; Its own packet trade is perhaps as considerable as that of any Western river, and its through trade from its great commercial center, Saint Louis, though competing with railroad transportation is of fair importance.

From the 1st of February, 1867, to the 1st of October, 1867, from Saint Louis 212 clearances are recorded for this section and 169 arrivals. Of the trade from Saint Charles, Fort Leavenworth, Saint Joseph, and other important points along the section, I am unable to furnish information, further than to say that it is very considerable.

The Government freight transported on this section amounted during the above eight months to 6,000 tons, and was consigned to Fort Leavenworth and Omaha.

For details of exports and receipts at the port of Saint Louis, I will refer to the tables annexed and furnished me by the courtesy of Mr. George H. Morgan, secretary of the Union Merchant's Exchange, Saint Louis.

For annexed list of Government freight, I am indebted to brevet Lieut. Col. C. W. Thomas, United States Army.

Navigation opens on the Lower Missouri on the breaking up of the ice about the last of February or the first of March, and continues good until the first or middle of September, when the river becomes so low as to cause great trouble from bars. Boats, however, continue running until late in November, or, in favorable seasons, until December, when ice closes the season. For the middle section the channel is good until the 1st of August above the Yellowstone, and until the middle of August below. From the latter period until the 1st of November the channel is full of bars and difficult. Boats have cleared from Fort Buford after the 1st of November, but at great risk.

In the upper section but little trouble is anticipated until the 1st of August; after that the rapids become quite impassable in ordinary seasons. The first boats for Fort Benton start from Saint Louis the latter part of March, and encounter floating ice on the spring rise, above Randall. With boats specially built for the mountain trade the up trip is made in sixty to sixty-five days; the return in fifteen to twenty days. On the second trip the time to Benton ranges from fifty to sixty days.

During the last season many boats not adapted to the river attempted the trip to Benton and without success. The *Centralia* started June 12, and was eighty-two days in reaching Fort Hawley; thirty-five on return. The *Imperial* started May 17, and was eighty-six days in making Cow Island; other boats made equally long trips. The increasing demands of the up-river trade caused this addition to the mountain fleet, and has proven the impolicy of sending any but light-draught powerful steamers to Fort Benton, except at the commencement of the season.

Parties interested in the upper river begin to recognize the necessity of a higher initial point than Saint Louis. Sioux City will probably soon become the rendezvous of the mountain fleet, since from that point the trip will be much shortened, the dangers of the lower river avoided, and two round trips to Benton assured. Rates of freight and insurance will be greatly reduced, and the commercial interests of Chicago will come in direct competition with those of Saint Louis, cheapening the value of goods to the consumer in Montana. Should it be decided to communicate with the river by wagon trains, at the mouth of the Muscle Shell, boats can make from four to five trips in a season with ease, by starting from Sioux City, thus diverting the whole Montana trade to the river. The map of the river, now being made under my direction, will not be finished until late in February, when it will be submitted.

For details of my tour of inspection of the obstructions in the river, and of the river commerce, I refer you to the papers accompanying this report. For kind attention and material assistance in performing the duty intrusted to me I am greatly indebted to Captain Hawley and the officers of the steamer *Miner*.

For many civilities and much useful information, thanks are due to officers of the Army stationed at the various military posts along the river.

In conclusion, I have the honor to be, sir, very respectfully, your obedient servant,

C. W. HOWELL,

Captain Engineers, Brevet Major, U. S. A.

Col. JOHN N. MACOMB,

Corps of Engineers, United States Army

II.

[Extract from Report of the Chief of Engineer, Part I, 1878.]

SPECIAL REPORT ON IMPROVEMENT OF THE MISSOURI RIVER ABOVE THE MOUTH OF
THE YELLOWSTONE.

UNITED STATES ENGINEER OFFICE,
HEADQUARTERS DEPARTMENT OF DAKOTA,
Saint Paul, Minn., January 3, 1878.

GENERAL: I have the honor to transmit herewith a report upon "The improvement of the Missouri River above the mouth of the Yellowstone."

* * * * *

THE SECTION OF COUNTRY TO BE SPECIALLY BENEFITED.

The section of country to be specially benefited by the improvement of the Upper Missouri River is the Territory of Montana, which lies about midway between the great lakes and the Pacific Ocean. Embraced between the forty-fifth and forty-ninth parallels and 104° and 115° west longitude, it is 276 miles wide from north to south and a little over 520 miles wide from east to west. It contains 143,776 square miles, above one-tenth of which (9,000,000 of acres) is farming land. About one-fourth of the inhabitants are miners, one-eighth stockmen, and the remainder tradesmen and professional men.

All crops are planted in May, with the exception of winter wheat, which is sown in October.

Hay is cut and stacked in July, and retains its natural green color until used. This peculiar characteristic is remarkable, and it is said that a load passing along the street at Christmas has the color and perfume of new-mown hay.

The greatest yield in the line of vegetables is in potatoes, turnips, and onions.

Strawberries of the finest varieties ripen in July, thus furnishing a luscious berry in the warmest month of the year at the rate of 40 to 50 cents a quart.

Tomatoes do not ripen until September.

Some apples are grown in the Territory, but not to any great extent.

The experiments of the Sisters of Saint Ignatius Mission have shown that the country is adapted to the growth of apples, plums, and all varieties of berries.

The spring-wheat flour of Montana is white, of fine quality, and makes most excellent bread, while its buckwheat and corn-meal are said to be equal to the best varieties of those articles in the States.

The chief exports of Montana at present are ores, furs, hides, wool, and cattle.

The imports are machinery, manufactured articles, merchandise, and supplies, such as sugar, coffee, tea, &c.

Mr. George Clendennin, jr., informs me that the greater portion of the furs and robes are collected from the Blackfoot Agency, the Marias, and Milk River trading-posts, and from the British possessions, and that Benton is the point from which they are shipped to the East. Benton receives annually about 100,000 robes and furs, and the Crow Agency, south of the Yellowstone, about 5,000. About 20,000 pounds of skins are received annually at the Crow Agency, and at Benton 150,000 pounds. Over 200,000 pounds of wool are annually shipped to the East. This quantity will gradually increase, and wool of a fine quality will become the great export of Montana.

The beef of Montana is the best in the world, and its mutton rivals the celebrated Southdown. The ease with which large herds are raised, and the comparatively slight cost of maintaining them, will undoubtedly cause Montana in the future to furnish the Eastern markets with an article of food which will be not only of a finer quality but cheaper than that with which they are now supplied. The valley of the Muscle Shell and the beautiful Judith Basin must be developed into magnificent grazing-farms. The herds in Montana are not housed and fed during the winter, but roam at will, and subsist on the plentiful, luscious, and nutritious grasses all the year round.

Of the shipments to the Territory, about one-fourth are to Benton and the remainder to Helena via Benton. Helena, the principal distributive depot, is about 140 miles from Benton, the transportation between the two places being by means of wagon-trains.

The establishment of three new posts, and the increase of the number of troops stationed in the Territory, will give an impulse to the settlement of the country by at least a partial removal of the two barriers to such settlement—insecurity of life and property.

In regard to the mineral wealth of the Territory, it has been said that as a gold-bearing country Montana stands next to California, and in silver she ranks first in quality possessed, and second to Nevada in the amount produced.

To enter fully into a discussion of the mining interests is unnecessary for the purposes of this report, the comprehensive and interesting reports of the commissioner of mining statistics being accessible. A few leading facts are, however, here set down.

In his report for 1874, the commissioner gives the following exhibit of the productions for the different years:

Years.	Amount.	Years.	Amount.
1869.....	\$9,000,000	1872.....	\$6,068,339
1870.....	9,100,000	1873.....	5,178,047
1871.....	8,050,000	1874.....	3,844,722

He says that the decrease of the gold yield is entirely due to placer mining. These narrow and rich gulches and bars, to which short ditches could be built by two or three men, have been exhausted. To work the gold-bars which abound in the numerous valleys, it is necessary to construct long and large ditches, and this can be done only by companies having abundant capital at their command. It is expected, therefore, that there will result a consolidation of the mining-ground heretofore owned in small parcels, and that the yield will be increased provided labor does not remain too high.

The shipments of silver ore are gradually increasing, and with the introduction of quartz-mills the gold yield will undoubtedly become greater. Millions of tons of ore now lie worthless at the mines on account of high rates of transportation.

Montana coal, which is abundant in all parts of the Territory, can be used, as it now is, for blacksmithing, for making steam for locomotives and steamboat purposes, as well as for making gas and smelting iron, galena, and, in short, for every purpose for which soft Pennsylvania coal can be used. According to the reports of the Secretary of the Interior, about 70,000 square miles, or half of Montana, is underlaid with coal-beds; but this I regard as an over-estimate.

Iron ore is equally abundant, and in time Montana can alone supply the needs of the western half of the continent with iron.

In regard to the use of the coal for steamboats I would add that the varieties of Montana coal (lignite) which I have seen are unfit for such purposes, if used alone, on any boat which is not furnished with locomotive boilers. It is difficult of ignition and the flame is short. But if used with wood it causes a saving in that article by keeping up a hot body to the fire, while the wood supplies the long, lapping flame.

THE VALUE OF THE MISSOURI RIVER AS A LINE OF COMMUNICATION AND TRANSPORTATION.

The Missouri River and the common roads connecting the Territory with the Union Pacific, Central Pacific, and Utah Northern railroads are at present the only regular lines of communication with Montana. Of these the river is by far the most important. It is *the* great route.

The completion of the Union Pacific and the low water of 1869 induced the merchants and shippers of Montana to contract for the transportation of their freight by the railroad, it having lowered its rates during the season of high water in order to compete with the boats. Time, however, proved the superiority of the water route in spite of the obstacles to navigation, and the bulk of imports returned to the river.

The Helena Independent, in one of its editorials, says of the river:

"Freights can be laid down at Benton at such a low rate that successful competition from any other source is next to impossible. At any rate it is the route that Montana must look to for cheap freights until she gets a railroad, and therefore it is the duty of her people to put forward their best efforts to secure measures that will aid in making this great natural highway available for the immense commerce that will pass over it for the next ten years. It is desirable that the river navigation should be kept up from the time ice breaks up in the spring until it is closed in the fall by ice."

The above-quoted statements are true; but should be stronger in this, that the Missouri River will always be an important line, no matter how many railroads may be built in Montana.

It is the intention to carry the Northern Pacific Railroad along the south bank of the Yellowstone. This road will, of course, receive part of the freight to and from Montana, as does the Union Pacific at present, but there is a large extent of the Territory which, from its greater convenience to the river, and from the very nature of its productions, must find an outlet for those productions in the Missouri.

It is impossible to say when the Northern Pacific will be finished or in operation, and it is also impossible to state what the freight rates on that road will be. But whatsoever they may be, the Missouri River will always receive the bulky matter, as better adapted to its carriage at rates to which the railroad cannot safely descend; and it will also by its competition keep at a reasonable figure the rates on those articles which will naturally seek the railroad for rapid transit. The river, then, will be indispensable, not only as a line of transportation, but as serving by its competition to keep down the freight rates on the railroads.

It is proposed now simply to submit such an exhibit of the commerce of the river last season as the information which could be obtained will permit.

Messrs. J. G. Baker & Co., of Benton, who ship over one-fourth of the freight which goes up the river, have, in compliance with my request, kindly furnished me with the following information:

During the last season 25 steamers arrived at Benton, landing 5,283 tons of freight and about 1,500 passengers. These boats carried down the river 3,200 tons of freight and about 500 passengers.

The imports consisted of merchandise for the merchants of Montana, supplies for the Army and Indians, and the Northwest Mounted Police of Canada.

The exports consisted of ore, wool, hides, and furs; principally of ore.

Owing to the Indian troubles, only six steamers landed at Cow Island, parties fearing to ship freight by that route, as it would have to be carried overland in wagons to Benton.

The additional cost of transportation *via* Cow Island has been 2½ cents per pound, or about three times as much as it would have been if boats could have carried the freight to Benton.

The average amount of freight landed at Cow Island annually is 500 tons, causing an extra annual expense to the Government and citizens of \$25,000. In addition to this, both the Government and citizens ship by the Union Pacific Railroad (a circuitous route, requiring 450 miles of wagon transportation) at a heavy expense. This causes a difference in freight of at least \$75,000. This would not occur were the river navigable during the whole season. Since 1870 the commerce of the river has increased 50 per cent.

During the month of September about 60 tons of Government freight were burned at Cow Island by the Nez Percés. This freight was lying at the landing awaiting transportation to Benton, and the loss could not have occurred if the boats had been able to reach the latter place.

The number of troops stationed in Montana has been increased, and it naturally follows that a greater amount of supplies will be sent to the Territory hereafter. It would be a great saving to the Government to be able to ship these supplies direct to Benton by boat, and thence haul them by wagons to the different posts, at the rate of 1½ cent per 100 miles.

The following is a classified schedule of exports, *via* the river, for 1877:

	Quantity.	Value.
EXPORTS.		
Ore and bullion.....tons..	*1,225	\$918,750 00
Wool.....pounds..	208,459	72,960 75
Buffalo-robos.....	50,512	202,048 00
Antelope, elk, and deer skins.....pounds..	68,530	12,335 40
Bear skins.....	61	305 00
Wolf skins.....	2,034	7,703 00
Beaver skins.....pounds..	6,703	6,703 00
Hides.....	15,267	45,801 00
Mixed furs.....		2,150 00
Sheep skins.....	1,482	592 80
Cattle.....head..	112	2,240 00
Fort Macleod shipments.....tons..	595	303,600 00
Cypress shipments.....do..	350	180,000 00
IMPORTS.		
Montana freight.....tons..	†4,648	1,394,000 00
Canadian freight.....do..	1,025	310,000 00

* Average value per ton, \$750.

† Average value per ton, \$300.

Of these imports, 390 tons were landed at Cow Island. The total value of the commerce of the river was \$3,458,536.60.

It is perhaps well to state here that the river is navigable to Benton from about May to the middle of August, and that from the latter date to about the middle of October boats land their freight and passengers at Cow Island.

The fact that freight must be rehandled at Cow Island (rehandling being always a source of increased expense), and that transportation by wagons is more costly than that by boats, has led the people of Montana to ask that the river should be improved in order that the annual period of navigation to Benton may be extended.

* * * * *

Very respectfully, your obedient servant,

EDWD. MAGUIRE,
First Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

III.

[Extract from Report of the Chief of Engineers, Part II, 1879.]

UNITED STATES ENGINEER OFFICE,
Saint Paul, Minn., August 12, 1879.

GENERAL: I have the honor to forward herewith my annual reports for the fiscal year ending June 30, 1879, upon the improvement of the Missouri River above the mouth of the Yellowstone, and upon the survey of the Yellowstone River.

Very respectfully, your obedient servant,

EDWD. MAGUIRE,
First Lieutenant, Corps of Engineers.

Brig. Gen. H. G. WRIGHT,
Chief of Engineers, U. S. A.

* * * * *

COMMERCE.

The number of steamboat arrivals at Benton was 46, an increase of 21 over 1877. The freight carried up the river amounted to 8,764 tons, of a value of about \$2,631,300, showing an increase over 1877 of 3,091 tons, of an approximate value of \$927,300. Maj. William B. Hughes, quartermaster U. S. A., under date of October 16, 1878, informed me that he had shipped from Yankton, Dak., for the Missouri River above Buford, 261,131 pounds of Government freight. Capt. E. B. Kirk, assistant quartermaster U. S. A., informs me that the Government freight shipped up the river from Buford amounted to 94,424 pounds.

I have been unable to obtain a full exhibit of the exports, but the amount of wool shipped down the river was 696,000 pounds, an increase over 1877 of 487,541 pounds. For purposes of comparison, the value of the wool is assumed as that of 1877 shipments: hence the money value on the increase shipment amounted to about \$169,639, or the total value of the 1878 wool was \$242,599.

Six of the descending boats were loaded with cattle. It is safe to assume that the amount of other articles of export did not fall below that of 1877. The amount of freight carried up the river will hereafter be greater, on account of the establishment of a large post, Fort Assinnaboine, on Milk River, about 40 miles north of the Missouri.

THE YELLOWSTONE AS A LINE OF COMMUNICATION AND TRANSPORTATION.

The section of country to be specially benefited by the improvement of the Yellowstone is, of course, the Territory of Montana. Reference will be made to the productions of the territory in general, but more particularly to the region adjacent to the river in question.

The valley of the Yellowstone is not inferior to other sections of Montana. The soil is as good, the grasses as fine, and the region south of the river in the neighborhood of Clark's Fork and its tributaries is rich in valuable ores. The Commissioner of Mining Statistics, in his report for the year ending December 31, 1874, says:

"From Mr. John Barnett, an old prospector in this region, Mr. Wheeler procured some fine specimens of ore, containing from 70 to 80 per cent. of lead, which he had found at the headwaters of Soda Butte Creek, a tributary of Clark's Fork of the Yellowstone, near the east boundary of the National Park.

"Blackmore and New World mining districts have been located here, taking in 12 miles from east to west and 6 from north to south. They contain a large number of

well-defined leads. The mountains, as Mr. Barnett describes them, are covered with wash-boulders of galena, and the veins, so far as tested, are from 6 to 25 feet wide.

"A tunnel across the Mammoth vein in the New World district shows 25 feet of solid ore, and the width of the vein is not known.

"The New Caledonia shows a well-defined 6-foot vein. The Great Republic, Gurley, Ironclad, Houston, Woody, Silver Zone, Silver Gift, Blackfoot, Shoo-Fly, Alta California, Alta Montana, and a large number of other veins, have been located but not developed. There is an abundance of wood and water for all purposes. A few miles of road-building would make the mines accessible for wagons. The ores could then be hauled in vast quantities to or near the Crow Agency, on the Yellowstone.

"From crude assays, these ores will yield from 50 to 200 ounces of silver per ton, and from 70 to 80 per cent. of lead. The mines are about 110 miles southeast of Bozeman."

In his report of April 11, 1876, the Commissioner says:

"The Clark's Fork mines show on the surface large quantities of galena and silver ore, very rich in galena—60 to 80 per cent.—and in silver-bearing from \$40 to \$600 per ton, according to the tests that have been made. * * * A company has been formed to begin their development; but it will take both time and money to make them profitable. *The improvement of navigation on the Yellowstone would bring steamboats within 100 miles of them.*"

He says, further, that quartz mining is on the increase all over the Territory, while the yield of placer mines is slowly diminishing year by year.

More retort gold from arrastras and small stamp-mills has been sold in 1875 than ever before, and less dust from placer mines.

The number of tons of silver ore worked and shipped in 1875 is very nearly double the quantity worked and shipped in 1874.

The copper interest is growing.

Mr. Wheeler estimates the yield of gold, silver, and copper during the year 1875 as worth \$3,596,100. This was the amount actually realized, "but at the close of the year there were more tons of silver and copper ores at the mouth of the mines prepared ready for shipment, of equal average value per ton, than were shipped during the year; and 100,000 tons of ores, running from \$40 to \$150 per ton, that will not bear shipment, are piled by the dumps for future working or awaiting cheaper transportation."

Want of transportation is the continual cry in Montana, and, in a great measure, limits the yield of the mines.

A remedy is hoped for in railroads or the improvement of the navigation of the Missouri and Yellowstone rivers, by help of Congress, for which the legislature has forwarded a memorial.

Mr. William F. Wheeler, formerly United States marshal, informs me that the mineral yield for the year 1877 was \$4,151,000 in value.

But the mineral wealth of Montana is of secondary importance compared to her value as a stock-raising and wool-growing section, being unsurpassed in the trans-Missouri country. The number of beef cattle driven and shipped from the Territory in 1877 amounted to 12,500 head, of an approximate value of \$250,000. The total wool shipment was 310,000 pounds, of an approximate value of \$108,500.

The improvement of the navigation of the Yellowstone will certainly give rise to an increase of population, and hence an increase of productions and shipments.

As stated above, the Yellowstone Valley is not inferior to other sections of the Territory, and is rapidly being settled. In a report forwarded to the Chief of Engineers, March, 1877, I expressed the opinion that, agriculturally considered, the valley of the Yellowstone could be classed as "fair." It was only on an overland trip last fall from Fort Keogh to Fort Buford that I was enabled to fully appreciate its full value. As late as 1876 almost every foot of this valley was in the undisputed possession of the Indians. Now there are settlements of white men, the river bank is lined with woodyards, where the laboring steamboats may purchase fresh supplies of fuel; the traveler encounters, every few miles, ranches with claims under cultivation, producing great varieties of vegetables and cereals, besides the luxury of melons, while the fertile bottom lands and gentle slopes are dotted with stock, grazing upon the bunch and buffalo grasses with which the land is thickly carpeted. Irrigation is a problem of easy solution, demanding an expenditure of but little labor and money, and such cheap and successful irrigation fulfills the only condition requisite in this region for the profitable growth of all kinds of grain. There is plenty of timber, and the valley is intersected by numerous streams of clear, sweet, running water.

The principal town of this section is Miles City, the seat of Custer County. It is beautifully situated on the east bank of Tongue River, in sight of the Yellowstone, and at present has a population of about 1,000 souls. It is a prosperous and thriving town, apparently free from much of the disorder and lawlessness so characteristic of frontier settlements.

Coulson City, about 6 miles above Baker's battle ground, is the highest point ever

reached by a steamboat. I have never seen this town, and have been unable to obtain any definite information concerning it. It would appear that it owes its origin to the fact that as far as known its site is the head of navigation on the Yellowstone, and that it was expected that it would be the transfer depot of supplies for the lower portion of Montana.

I was unable to obtain any reliable information from the citizens along the river of the amount and value of the freight carried up the Yellowstone last year. Capt. E. B. Kirk, assistant quartermaster U. S. A., estimates the amount of private freight last year as 1,000 tons, of an approximate value of \$300,000. Large amounts of freight were later in the season carried overland by wagons. The total amount of Government freight was about 5,088 tons.

The river is at present the main line of transportation connecting the two large posts, Forts Keogh and Custer, with the east. The Northern Pacific Railroad is in progress of construction to the Yellowstone, and it is the intention to carry it up the valley of that stream. This road will, of course, detract somewhat from the value of the river, but a healthy competition will arise and result in a benefit to the people of Montana. The river will always receive its share of the freight, especially of the bulky class, and of such articles as do not demand an immediate market, since it is better adapted to their carriage, at rates to which the railroads cannot safely descend. It will also, by its competition, keep at reasonable figures the rates on those articles which will, other things being equal, seek the railroad for rapid transit.

The Northern Pacific probably will not for years have any local business on the long stretch of over 200 miles from Bismarck to the point where it will strike the Yellowstone, and naturally freight rates to and from Montana will be high, unless kept down by competition. It will be only for the western portion of the Territory that the Union and Northern Pacific railroads will compete, and consequently the Yellowstone will be the only line of transportation for the southeastern section to rival the latter railroad.

IV.

[Extract from Annual Report of the Chief of Engineers, U. S. Army, Part II, 1881.]

UNITED STATES ENGINEER OFFICE,
Saint Paul, Minn., July 13, 1881.

GENERAL: I have the honor to transmit herewith my annual reports upon the works of river improvements in my charge, for the fiscal year ending June 30, 1881.

Very respectfully, your obedient servant,

EDWD. MAGUIRE,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

STATISTICS.

Capt. E. B. Kirk, assistant quartermaster U. S. Army, informs me that during last season there were shipped from the depot at Bismarck for points on the Missouri River 9,036,818 pounds of military stores.

Capt. D. D. Wheeler, assistant quartermaster U. S. Army, informs me that during the season of 1880 there were shipped from Yankton to points on the Missouri River 15 head cattle, 11 horses, 135 mules, and 2,595,132 pounds of stores.

Lieut. Francis Woodbridge, Seventh Infantry, acting assistant quartermaster, informs me that during the season of 1880 there were shipped from Fort Buford, Dak., for the Upper Missouri River 661,971 pounds stores and 1 horse.

From the River Press, of January 5, 1881, published at Fort Benton, I obtain the following information: "The total amount of freight, exclusive of Government freight, carried into the Territory by the river was 16,913,693 pounds."

I have been unable to obtain a full exhibit of the exports, but the amount of wool shipped by the river was 600,000 pounds. It is safe to assume that the amount of other articles of export was not less than that of previous years.

The total shipments of hides, pelts, furs, &c., from the Territory, by rail and river, amounted to 680,000 pounds. The exports of Montana, crude and refined silver and other bullion, for 1880 amounted to 10,913,407 pounds. During the year there were 10,000 head of beef steers driven to the eastern market and to the British possessions

Summary of river freight, exclusive of exports and Indian Department freight.

	Pounds.
Private freight.....	16,913,693
Government freight from Bismarck.....	9,036,818
Government freight from Yankton.....	2,595,132
Government freight from Fort Buford, Dak.....	661,971
Government freight from Cow Island, Mont.....	3,362
Government freight from Coal Banks, Mont.....	48,219
Government freight from Fort Benton, Mont.....	48,845
Total.....	29,308,040
Or about 14,654 tons.	

IMPROVEMENT OF YELLOWSTONE RIVER, MONTANA AND DAKOTA.

STATISTICS.

Capt. E. B. Kirk, assistant quartermaster U. S. Army, informs me that during last season there were shipped from the depot at Bismarck for points on the Yellowstone River 2,192,173 pounds of military stores.

Capt. D. D. Wheeler, assistant quartermaster U. S. Army, informs me that during the season of 1880 there were shipped from Yankton to points on the Yellowstone River 30 mules and 479,015 pounds of stores.

Lieut. Francis Woodbridge, Seventh Infantry, acting assistant quartermaster, informs me that during the season of 1880 there were shipped from Fort Buford, Dak., to points on the Yellowstone River 1 horse and 222,268 pounds of stores.

Capt. A. R. Nininger (formerly captain, United States Army) informs me that the exports of Montana last season, by the Yellowstone, amounted to about 600 tons of hides, pelts, furs, &c.; that shipment will be nearly double this season. New towns are springing up in the valley, and the settlements are rapidly increasing.

Maj. F. P. McElrath, land commissioner at Miles City, informs me that there were twenty-four steamboat arrivals at Miles City during the season of 1880, averaging 250 tons of freight per boat, or a total of 6,000 tons, which included Government freight.

Summary of river freight, exclusive of Indian Department freight.

	Pounds.
Exports.....	1,200,000
Private imports.....	8,810,319
Government freight from Bismarck.....	2,192,173
Government freight from Yankton.....	479,015
Government freight from Buford.....	222,268
Government freight from Big Horn Depot.....	22,138
Government freight from Fort Keogh.....	274,087
Total.....	13,200,000
Or about 6,600 tons.	

V.

[Extract from Annual Report of the Chief of Engineers, U. S. Army, Part II, 1882.]

UNITED STATES ENGINEER OFFICE,
Saint Paul, Minn., July 8, 1882.

GENERAL: I have the honor to submit herewith my annual reports upon the works of river improvements in my charge for the fiscal year ending June 30, 1882.

Very respectfully, your obedient servant,

EDWD. MAGUIRE,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

COMMERCIAL STATISTICS [MISSOURI RIVER].

Five lines of steamboats make their headquarters at Bismarck, Dak., and from 20 to 30 boats ply between that town and points on the Missouri River, making during the season of navigation from one hundred and fifty to one hundred and seventy-five trips. The business for 1881 was in excess of that of any previous year. There were 21 boats employed, the largest being the *Dacotah*, with a freight capacity of 1,400 tons, and the smallest with a freight capacity of 250 tons. These boats carried into Montana 27,560,000 pounds of private and 7,200,000 pounds of Government freight, making a total of 34,760,000 pounds, valued at \$5,214,000.

In addition, there were transported 1,300 passengers, 2,400 Indians, 1,800 head of horses and cattle, and 600 head of sheep. The exports, as far as learned, were as follows: 23,000 buffalo hides, valued at \$37,500; 180 tons wool, valued at \$90,000; 253,750 pounds of hides, pelts, &c., valued at about \$76,125; and also an unestimated quantity of furs and wolf skins.

The steamboat owners estimate that the business this season will exceed that of last year. The rapid settlement of the country tributary to Benton and the Judith Basin will call for large shipments by river in the future.

* * * * *

COMMERCIAL STATISTICS [YELLOWSTONE RIVER].

Five lines of steamers make their headquarters at Bismarck, Dak., and from 20 to 30 boats ply between this town and points on the Missouri and Yellowstone, making during the season of navigation from one hundred and fifty to one hundred and seventy-five trips.

The steamboat business for 1881 was greatly in excess of any previous year. There were 21 boats employed, the largest being the *Dacotah*, with a freight capacity of 1,400 tons, and the smallest the *General Tompkins*, with a freight capacity of 250 tons.

The freight carried up the Yellowstone River amounted to 8,420,000 pounds, of an estimated value of \$1,263,000. The exports were principally hides, furs, and skins. There were shipped 93,000 buffalo-ropes, of a value of \$232,500, and about 263,000 pounds of hides, valued at \$95,533, besides a quantity of furs and wolf skins. The above values are those on the river bank.

The Northern Pacific Railroad has tapped the Yellowstone Valley at Glendive, and it is hardly possible that there will be any freight carried on the river above Glendive as long as the railroad freight rates remain reasonable. But from Glendive to the mouth is a stretch of river which may be made very useful as a line of transportation for Benton and other Upper Montana freight. The long river haul of 303 miles from Bismarck to Buford would thus be saved by a down-river haul of about 100 miles. Hence it is proposed to confine the work of the coming season to that portion of the river. The work will consist in completing the dam at Katie's Island by raising it a foot higher, removing rocks and snags from the channel at the foot of Katie's Island, constructing dams at Glendive Shoal and Stanly's Shoals, and removing the few rocks and snags which are to be found between those points.

There are several other places which need improvement, particularly the mouth. There are in the lower reach a number of snags and overhanging trees which should be removed. I am confident that a channel at least 3½ feet deep can be obtained and maintained during the season of navigation.

* * * * *

VI.

[Extract from Annual Report of the Chief of Engineers, U. S. Army, Part II, 1883.]

SAINT PAUL, MINN., *March 17, 1883.*

GENERAL: I have the honor to submit the following reports on the works in my charge.

Very respectfully, your obedient servant,

EDWD. MAGUIRE,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

* * * * *

COMMERCIAL STATISTICS.

The following is a classified schedule of exports and imports via the river as far as could be learned :

Articles.	Quantity.	Value.
EXPORTS, 1877.		
Ore and bullion	tons.. 1, 225	\$918, 750 00
Wool	pounds.. 208, 459	72, 960 75
Buffalo robes	50, 512	202, 048 00
Antelope, elk, and deer skins	pounds.. 68, 530	12, 335 40
Bear skins	61	305 00
Wolf skins	2, 034	7, 051 45
Beaver skins	pounds.. 6, 703	6, 703 00
Hides	15, 267	45, 801 00
Mixed furs		2, 150 00
Sheepskins	1, 482	592 80
Cattle	head.. 112	2, 240 00
Fort Macleod shipment	tons.. 595	303, 600 00
Cypress shipment	do.. 350	180, 000 00
IMPORTS, 1877.		
Montana freight	tons.. 4, 648	1, 394, 000 00
Canadian freight	do.. 1, 025	310, 000 00
The total value of the commerce of the river was		3, 458, 536 60

In 1878 the number of steamboat arrivals at Benton was forty-six. The freight carried up the river amounted to 8,764 tons, of an approximate value of \$2,631,300. The Government freight shipped from Yankton, Dak., for the river above Buford amounted to 261,131 pounds, and the amount shipped up the river from Buford was 94,424 pounds.

The amount of wool shipped down the river was 696,000 pounds, and the amount of other articles of export was about the same as the previous year.

In 1880 there were shipped from Bismarck for points on the Missouri River 9,036,818 pounds of Government freight. From Yankton there were shipped to points on the Missouri River 2,595,132 pounds of Government freight, and from Buford there were shipped to points on the Missouri River 661,971 pounds of Government freight. The amount of wool shipped down the river was 600,000 pounds, and the amount of other articles of export was about the same as that of previous years.

River freight, exclusive of exports and Indian Department freight.

	Pounds.
Private freight	16, 913, 693
Government freight from Bismarck	9, 036, 818
Government freight from Yankton	2, 595, 132
Government freight from Fort Buford	661, 971
Government freight from Cow Island	3, 362
Government freight from Coal Banks	48, 219
Government freight from Benton	48, 845
Total	29, 308, 040

Or about 14,654 tons.

In 1881 five lines of steamboats made their headquarters at Bismarck, Dak., and 21 boats plied between that town and points on the Missouri River, making during the season of navigation from one hundred and fifty to one hundred and seventy-five trips. These boats carried into Montana 27,560,000 pounds of private and 7,200,000 pounds of Government freight, making a total of 34,760,000 pounds, valued at \$5,214,000. In addition there were transported 1,300 passengers, 2,400 Indians, 1,800 head of horses and cattle, and 600 head of sheep. The exports, as far as learned, were as follows: 23,000 buffalo hides, valued at \$37,500; 180 tons wool, valued at \$90,000; 253,750 pounds of hides, pelts, &c., valued at about \$76,125, and also an unestimated quantity of furs and wolf skins.

In 1882 the number of steamboat arrivals at Benton was 40, the number of departures from Bismarck being 86, and the number of arrivals at the same place being 85.

The total shipment of freight from Bismarck was 32,194,041 pounds, of an approximate value of \$4,829,106. Of this amount, 5,100,000 pounds was Government freight. There were 3,500 passengers and 1,200 troops transported.

The exports from Benton were as follows:

Articles.	Quantity.	Value.
Wool.....pounds.	1, 200, 000	\$300, 000
Cattle.....number.	1, 000	40, 000
Bullion.....pounds.	129, 490	63, 000
Beef hides.....do.	7, 600	34, 000
Buffalo hides.....number.	28, 000	112, 000
Bales, skin.....do.	1, 250	31, 000
Bales, robes.....do.	3, 000	24, 000
Merchandise.....pounds.	44, 681	8, 930
Total		612, 930

The total weight of these shipments was about 4,000,000 pounds.

The ports of entry are Benton, Mont., Poplar River, Mont., Bismarck, Dak., and Omaha, Nebr.

* * * * *

COMMERCIAL STATISTICS.

Last year there were no steamboats on the Yellowstone, except those belonging to the Northern Pacific Railroad, and which were employed in carrying railroad material. It is doubtful if the Yellowstone above Glendive will ever again be of any importance as a line of transportation, unless the railroad company should exact too much. But that portion of the river from Glendive to the mouth should be improved and kept open. A navigable depth of 3½ feet at low water can be obtained and maintained during the whole boating season, thus supplying a competing water route of value.

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VII

[Extract from Annual Report of the Chief of Engineers, United States Army, Part II, 1884.]

UNITED STATES ENGINEER OFFICE,
Saint Paul, Minn., July 11, 1884.

GENERAL: I have the honor to forward herewith my annual report for the fiscal year ending July 30, 1884.

JAMES B QUINN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. ARMY.

IMPROVEMENT OF THE MISSOURI RIVER FROM SIOUX CITY IOWA, TO FORT RENTON, MONTANA.

* * * * *

The steamboat business is again on the increase, a healthy down-stream and local trade rapidly developing under the influence of the rapidly increasing population of the country tributary to the river. Below Bismarck, where little if any attempt has been made to improve the river, the local trade has caused a revival of the steamboat interest, and this interest appears to be flourishing in spite of the serious difficulties which it encounters in the snags and shifting sand-bars of this sandy portion of the river. The improvement of this portion of the river before the banks are thickly settled is very desirable, since it will be much less expensive to carry out any plan of improvement now than it will be when the question of damages to the property-holders along the banks demand consideration. In this connection I respectfully invite attention to a discussion of this subject in my last year's report, the estimates and recommendations of which are renewed.

During the season of 1883 there was transported upon the river under my charge 23,595,144 pounds of freight and an unknown number of passengers. A large percentage of this freight was Government goods and supplies.

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IMPROVEMENT OF THE YELLOWSTONE RIVER, MONTANA AND DAKOTA.

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The commerce of this river is at present insignificant, but may assume important proportions as the country tributary to it comes under cultivation. Some immediate prospects of benefits to transportation are offered in the project to ship up Missouri River freight to Glendive by railroad, and thence down the Yellowstone to Fort Buford, &c., giving a short down-stream haul to Fort Buford instead of the 300 miles of up-stream haul from Bismarck, as at present.

* * * * *

APPENDIX B.

ANNUAL REPORT OF CAPTAIN JAMES B. QUINN, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Saint Paul, Minn., August 21, 1886.

SIR: In response to your telegram of the 18th inst., I have the honor to inclose herewith the report of operations upon the improvement of the Missouri River between Sioux City, Iowa, and Fort Benton, Mont., for the fiscal year ending June 30, 1886.

Very respectfully, your obedient servant,

JAMES B. QUINN,
Captain of Engineers, U. S. A.

Maj. CHAS. R. SUTER,
President Missouri River Commission, Saint Louis, Mo.

REPORT OF OPERATIONS FOR IMPROVING THE MISSOURI RIVER FROM SIOUX CITY, IOWA, TO FORT BENTON, MONT., FOR THE FISCAL YEAR ENDING JUNE 30, 1886.

The working party which had been left at Two-Calf Island, early in 1885, had accumulated a large quantity of brush and other dam-building material by the arrival of the steamer Josephine, July 3, but this party was not moved up to the head of Grand Island, the site of the proposed dam, till the 26th of July. By the 10th of August the dam at the head of Grand Island was finished. This dam is 660' long and required for its construction a large amount of material, viz, 850 fascines, 725 poles and stakes, and 830 cubic yards of rock and gravel ballast.

As soon as this dam was finished the party crossed over to the head of Hammond Island and, shortly after, finished the dam at this point. This dam is 350' long and required in its construction 1,700 fascines, 1,450 poles and stakes, and 1,660 cubic yards of rock and gravel ballast.

Through the agency of these two constructions the difficult crossing at Grand Island has been entirely remedied.

As soon as these two dams were finished the working parties were moved up to Duphins Rapids, and the reconstruction of the dams at this difficult place commenced.

The main dam at this place is 1,127' long, and, at its outer extremity, is joined to a wing which extends down stream a distance of 560'. About 600' above the main dam a relief dam 612' long was built parallel with the main dam.

In the construction of these dams there was used 3,900 fascines and 1,850 cubic yards of rock and gravel ballast.

The completion of the dams at this point has very materially improved the navigation, as it was a very difficult place, not only on account of the shoal waters, but also for the swiftness of the current. Heretofore all the dams constructed at this place have been destroyed by the ice or high water, and it is, therefore, with no little pride that I am now able to state that the dams recently built at this place have successfully withstood the onslaught of the ice and high water and are now in as good condition as when finished. To those unacquainted with the location the significance of the above statement may not be fully appreciated otherwise than a complete vindication of the employes engaged upon the work, as to the untruthfulness and malignant assertions of envious and carping critics, but, aside from this, it appears to be proven that the form of construction adopted in these dams is the best adapted to meet the requirements of future similar work. It is a matter of serious regret that suitable material for such dams is becoming very scarce and will have to be transported long distances. As a consequence such constructions must rapidly increase in

cost, and it was in partial anticipation of this that the acquisition of a powerful dredge boat was urged.

During the season 3,309 lineal feet of dam was constructed at an average cost of \$9.07 per lineal foot. Considering the very substantial character of the constructions this is a very reasonable price, and it is hardly likely that it can be improved upon in any future work of this description.

The steamer Josephine, owing to the lack of any appropriation for snagging, was used as a transport and tow-boat. And from estimates based upon some similar work, done by the Fort Benton Transportation Company, her possession by the Government resulted in a saving to the work of something near \$30,000. The original cost of the steamer was \$13,200, and consequently, she apparently more than paid for herself in one season.

While she is thoroughly fitted for the duty for which she was bought, she is entirely too large for economical towing, about the works, and a small tow-boat is essential for the economical prosecution of the work.

The Josephine can be used for the transportation of materials and supplies at the commencement of the season and afterwards attend to her special duties of snag pulling.

The tow-boat would, therefore, be solely for use as a tow-boat, and should be equipped with powerful machinery and be of small size.

The narrowness of the channel in the rocky portion of the river subjects the larger boats to a very severe service during the working season, and in consequence the steamer Josephine will need some repairs to enable her to resume work. She was hauled out on the bank to protect her from the outgoing ice during the spring break-up, and through the absence of funds, to put her in commission, she was left on the blocking until the rapid cutting of the bank made it necessary to launch her.

The steam dredge-boat was completed on the 2d of September and proved to be an excellent machine. During the short experimental working of the machine it averaged 1,500 cubic yards per day, and will, undoubtedly, be able to excavate considerably more than this per day, when working regularly. As it was finished too late in the season to begin any extensive work, it was merely employed in excavating a small experimental channel through the bar immediately below Fort Benton, the material removed being used to form a small temporary dam. As the result of this work a four-foot channel through the bar was obtained, and, at last accounts, this depth was still maintained, the ice having simply leveled the earthen dam, as was expected.

Upon the suspension of work the dredge and a barge were laid up for the winter in a harbor dredged out for the purpose. The remainder of the floating plant was hauled out, beyond danger, where it still remains, with the exception of the steamer Josephine, before alluded to.

Plans for a pair of improved compound non-condensing engines, for the steamer Josephine, have been prepared in the event of its becoming necessary to substitute new engines for the present old-style high-pressure engines. Plans have also been nearly completed for the small tow-boat.

All of the past season's work has been confined to that portion of the river between Fort Benton and Carroll, Mont. It is difficult to get any definite information concerning the extent of the commerce over this portion of the river, as the only line of boats upon this portion of the river is owned by a single firm, who appear to be afraid to furnish any statistics of their trade, for the reason, as they expressed it, "that it would be used against them." I have no information from them upon this subject, but from an estimate made from the number of trips made by their boats during the season, as given by my recorders at the works, there was probably something like 13,500,000 pounds of freight carried by the four boats during the season.

Of this amount, probably 1,000,000 pounds was wool, shipped down-stream. Besides the wool there was considerable grain, flour, hides, and bullion shipped down-stream, of which I can give no estimate. Although the down-stream traffic does not amount to half of that in the opposite direction, I believe it would show a healthy increase from year to year if the data was accessible.

Between Bismarck and Fort Benton the local traffic is on the increase, but is much retarded in consequence of the greater portion of the bordering country being Indian reservations, and, practically, non-productive.

Below Bismarck the local traffic is improving, and several small boats find profitable occupation. The General Terry and General Tompkins are running in this portion of the river, but I am not in possession of any information as to the extent of the commerce carried.

The country is being gradually settled up, and, in the event of the Indian reservations being opened up for settlement, the commerce of this portion of the river will be speedily increased.

Nothing has been done on this stretch of river between Bismarck, Dak., and Sioux City, Iowa, for some time, and although it is possible to apply the system of improve-

ment advocated by me for the improvement of the sandy portion of the upper river, I do not think that, for the present, there is much more improvements required here than will result from the pulling of the dangerous snags.

PROJECT FOR NEXT SEASON'S OPERATIONS.

The dredging should be continued and, in connection with it, the construction of dams, when necessary, to further control the water and maintain it in the desired channel.

The snag pulling is very necessary, and should embrace the whole of the river between Sioux City, Iowa, and Carroll.

As the rectification of the channel in the sandy portion of the river is becoming necessary with the advance of the improvement, the application as an experiment to a characteristic section, should be provided for.

With the addition of a suitable tow-boat it is believed the plant will be in such condition that the greater portion of the work can be done by contract.

Estimates.

Dredge operations, including repairs.....	\$30,000 00
Snag-boat operations, including repairs.....	25,000 00
Tow-boat operations, including repairs	15,000 00
Dam-building operations.....	30,000 00
Experimental works for rectification of channel, including plant	32,000 00
Office and inspection expenses and surveys.....	20,000 00
Care and preservation of plant, and contingent expenses	8,000 00
Total	160,000 00

Money statement.

July 1, 1885, amount available	\$43,958 21
July 1, 1886, amount expended during fiscal year exclusive of outstanding liabilities, July 1, 1885.....	\$42,866 83
July 1, 1886, outstanding liabilities.....	1,091 38
	<u>43,958 21</u>
{ Amount (estimated) required for completion of existing project.....	<i>not determined.</i>
{ Amount that can be profitably expended in fiscal year ending June 30, 1888	160,000 00
{ Submitted in compliance with requirements of section 2 of river and harbor acts of 1866 and 1867.	
Total expended upon the present project to June 30, 1886....	201,456 87

Abstract of appropriations.

By act of Congress approved August 14, 1876.....	\$20,000 00
By act of Congress approved June 18, 1878.....	30,000 00
By act of Congress approved March 3, 1879	45,000 00
By act of Congress approved June 14, 1880.....	25,000 00
By act of Congress approved March 3, 1881	40,000 00
By act of Congress approved August 2, 1882.....	100,000 00
By act of Congress approved July 5, 1884	*125,000 00
Total	385,000 00

* Thirty thousand dollars of this amount was expended by Missouri River Commission.

The following table gives the cost, capacity, &c., of boats navigating the Missouri River between Sioux City, Iowa, and Fort Benton, Mont., in 1885-'86.

Names.	Cost.	Horse-power.	Custom-house tonnage.	Tonnage on 3 feet draught.	Tonnage on 2 feet draught.	Tonnage to the inch.	Remarks.
Benton*	\$25,000 00	325.42	394.08	181.9	55	14.0	
Helena*	22,500 00	244.42	352.31	205.5	70	13.5	
Rosebud*	20,000 00	283.48	286.49	182.1	75	11.9	
Batchelor*	18,500 00	244.42	313.00	195.6	90	11.9	
Milwaukee†							No record.
Judith†							Do.
General Tompkins†							Do.
General Terry†	16,000 00	239.98	323.15	186.0	75	11.5	
Josephine	19,000 00	325.42	300.51	180.7	70	12.3	Government.
Eclipse	19,000 00	258.80	295.98	182.1	75	11.9	

* Between Bismarck and Fort Benton.

† Between Sioux City and Bismarck.

‡ Formerly Union Pacific Railroad transfer boat.

Several smaller boats also navigated the river, the names of which have not been learned.

The following table gives the (estimated) business of 4 boats in 1885:

Names.	Number round trips.	Tons carried each trip.		Total tons.	Total number pounds.
		Up-stream.	Down-stream.		
Batchelor	5	300	150	2,250	4,500,000
Helena	4	300	150	1,800	3,600,000
Benton	3	300	150	1,350	2,700,000
Rosebud	3	300	150	1,350	2,700,000
Total	15	300	150	6,750	13,500,000

APPENDIX C.

ANNUAL REPORT OF ASSISTANT S. WATERS FOX.

MISSOURI RIVER COMMISSION, OFFICE OF DIVISION ENGINEER,
Saint Joseph, Mo., July 16, 1886.

MAJOR: I have the honor to submit the following report of the operations under my charge in this vicinity during the period from July 1, 1885, to May 31, 1886.

A map of the reach showing the progress of the improvements accompanies the report. The project contemplated the completion of the repairs to the revetment in Elwood Bend, and the extension of the revetment in Bonton Bend 8,786' down-stream.

REVETMENT WORK.

Elwood revetment (see Map, F, G, and H).—This work consisted in procuring and placing 435 cubic yards of riprap stone on the three pieces of mattress constructed in April, 1885. It was begun July 15 and finished on the 20th.

Bonton revetment (see Map, A to B).—The construction of mattress in Bonton Bend began July 24 and was continued to October 8; 1,195,992 square feet were woven, protecting 9,725 lineal feet of bank. The larger portion of this work was accomplished with one mattress boat. A second boat was in operation thirty-nine working days.

Owing to the presence of a heavy accretion on the revetment constructed in May and June, it was impracticable to connect the new work with it. It was started at

a point about 200' below; the intervening bank however is protected by a revetment constructed in the fall of 1884 by the Saint Joseph Water Company.

The mattress, which was of the continuous woven type, reinforced with $\frac{3}{4}$ " and $\frac{1}{2}$ " steel cable, was constructed in accordance with the specifications, except perhaps in that its low-water width was varied between limits of 80' and 95' as demanded by the cross-section.

The 7,372 cords of willow brush used in this work were procured by hired labor at a cost of \$1.378 per cord delivered on barges at the mattress boats. The average haul by wagon was 1.47 miles, and the average tow by steamer 9.8 miles down-stream.

HYDRAULIC GRADING.

Bank grading was begun July 22 and completed September 26; 10,149 lineal feet were graded involving a removal of 83,394 cubic yards of earth. The prevailing slope was $3\frac{1}{2}$ on 1, the steepest 3 on 1, and the flattest 5 on 1. This great range in slope was necessitated by numerous pockets in the shore line.

The larger portion of this work was accomplished with hydraulic grader No. 2, which is provided with a Davidson pump, outside plunger, 12" steam cylinder, 10 $\frac{1}{2}$ " plunger, and 18" stroke. Hydraulic grader No. 1, which has a pump of the same size and manufacture, was also in service during most of the time that two mattress parties were in operation.

The average cost per cubic yard of material removed was \$0.0184. This however is not a fair showing of what should be accomplished with these pumps, as nearly 40 per cent. of the time was lost in delays occasioned by bad hose. The old stock proved to be rotten, and the new hose was too light to stand the pressure necessary for the best results. In consequence, the mattress boat was continually crowding the grader, often forcing it into awkward positions and choking the pump with the floating trash of leaves and small twigs. Sometimes it became necessary to stop weaving and resort to hand grading until the hydraulic grader could work ahead. Then again portions of the bank where the material was very light and the current swift had to be graded a second time.

The maximum work possible with these graders, in good condition, might be stated as follows, viz:

With the pump working at 100' piston speed, to grade a 15' bank of free and average material, to a slope of $3\frac{1}{2}$ on 1 for a distance of 111', in ten hours at a cost of one cent per cubic yard. This would impose a duty of 80 per cent. on the pump and of 150 per cent. on the water.

A gang of experienced weavers will weave 150 lineal feet, or more, of mattress in ten hours; so that in order to keep these graders well ahead of the mattress boat they must be worked at least fourteen hours.

ROCK-WORK.

It was expected that all of the rock necessary for the Bonton revetment would be furnished by contract.

The bids received in answer to the first advertisements were rejected, and it was not until August 18 that the contract awarded to W. J. Hobson was approved.

Owing to this delay, and afterwards to the inability of the contractor to furnish rock as rapidly as required, it became necessary to procure a portion of the material by hired labor; and even under this arrangement there was a balance of 5,312 cubic yards of rock still required when we were forced to suspend work, December 4, on account of the ice in the river.

Before resuming work in the spring a contract was let for furnishing and delivering on Government barges 2,000 cubic yards of riprap stone, at 70 cents per cubic yard. This was done with a view to hastening the completion of the work. The first delivery was made April 8, and the last May 12. In all, 4,735.07 cubic yards were delivered and placed on the mattress.

The total quantity of rock from all sources on the 9,725' of mattress is as follows, viz:

	Cubic yards.
Hired labor	4,067.70
Contract.....	17,235.01
Total.....	21,302.71

or an average of 2.19 cubic yards per lineal foot. The cost of the rock is shown in item in the cost exhibit.

The total length of revetment constructed in Bonton Bend is 10,501'. The total net cost of the work was \$49,007.20 or \$4.66 per lineal foot.

The cost in detail of the 9,725' constructed during the year is shown in the following exhibit:



MAP OF THE MISSOURI RIVER

ST. JOSEPH, MO.

showing progress of improvements made under the direction of

Major Charles R. Suter

Corps of Engineers U. S. A.

President Missouri River Commission

Scale - 1 inch = 2000 ft.

To accompany my Annual Report
dated July 16th 1886.

S. M. H. T.

U. S. Army Engineer in local charge.

H Ex 28 49 2



Final cost exhibit in detail, Bonton revetment—second section.

Distribution.	Quantity.	Cost.	Cost of 9,725 feet of re- vetment.	Cost per foot of re- vetment.
Contract:	<i>Cubic yards.</i>	<i>Per cu. yd.</i>		
Contract	17,235.01	\$0.5420		
Towing:				
Labor		.1446		
Fuel		.1381		
Subsistence		.0583		
Cost at work		.8830	\$15,219.83	\$1.56+
Rock procured by hired labor:				
Quarry	4,068.	.2980		
Chute		.0008		
Stripping		.0883		
Road-work		.0089		
Blacksmith		.0070		
Powder and fuse		.0172		
Hauling		.2748		
Subsistence		.0605		
Cost at work		.7555	3,073.37	.31+
Placing rock:				
Labor	21,303.01	.1364		
Subsistence		.0434		
		.1798	3,832.34	.39+
				2.27
Willow brush:	<i>Cords.</i>	<i>Per cord.</i>		
On stump	7,372.	.0591		
Cutting		.2215		
Binding		.0976		
Loading teams		.0486		
Hauling		.2322		
Loading barges		.1310		
Towing:				
Labor		.1553		
Fuel		.1709		
Subsistence		.2624		
Cost at work		1.3786	10,163.62	1.05
Weaving mattress:	<i>Lineal feet.</i>	<i>Per lin. ft.</i>		
Labor	97.25	.5846		
Subsistence		.2066		
		.7912	7,694.42	.79
Anchoring mattress:				
Labor		.0561		
Deadmen and labor		.0044		
Cable, $\frac{3}{4}$ -inch		.2490		
Cable, $\frac{1}{2}$ -inch		.1207		
Subsistence		.0177		
		.4479	4,355.82	.45
Grading, hydraulic:	<i>Cubic yards.</i>	<i>Per cubic yd.</i>		
Labor	83,167.	.0111		
Fuel and supplies		.0036		
Subsistence		.0037		
		.0184	1,530.27	.16
Grading, hand:				
Labor	227.	.1144		
Subsistence		.0469		
		.1613	36.61	.00
			45,906.28	4.72

Average tow (down-stream) rock miles 12.07 Average haul rock feet 3,600
 Average tow (down-stream) brush do.. 9.80 Average haul brush miles 1.74

TOW-BOAT SERVICE.

The United States steamer Osceola was in service on this reach from July 19 to November 7, at which time she left for Kansas City, on her way out of the river. She was admirably adapted for a work of the character and magnitude of the one in question.

The excessive cost of transportation of brush and rock, noted in the exhibit, was due to the fact that, by reason of the delay in letting the rock contract, nearly the entire expense of running her in the first part of the season had to be borne by the brush, while later in the season it had to be charged to the rock account.

From November 10 to December 7, and from April 5, 1886, to May 12, 1886, the United States steamer Sabrina was in service.

PULLING OUT BOATS.

October 15 instructions were received that the entire fleet, with the exception of the steamer Osceola, would be wintered on the river-bank in this vicinity. Launching and storage ways were accordingly designed, and 2 acres of ground, necessary for the accommodation of the forty-two pieces, were selected near the lower end of the Bonton revetment, and leased for one year with the privilege of two years, at \$4 per acre per year. The construction of the ways was begun October 31. The first boat was pulled out November 21. Ice began running in the river December 4; extremely cold weather ensued, and so interfered with the work that it was January 27 before the last of the pieces was out.

The boats were pulled up an incline of 4 on 1; when at the top they rested on tilting-needles 24' in length. After being tilted to a horizontal position the boat was pulled on to a set of butter-boards, resting on a track which was at right-angles to the ways of the incline. Upon these butter-boards as a carriage, the boat was taken to a position in front of the particular storage-ways, to which it was assigned and finally hauled there.

The pulling was done with two steam-windlasses, one a single cylinder 8" by 8", the other a double cylinder 6" by 6". The steam was furnished from the boiler of hydraulic grader No. 1, until the steamer Doris was gotten into final position on the ways, when it was taken from her boiler. The maximum pull required on the incline was 105,620 pounds; the average 38,196 pounds.

The cost of the construction of the ways was \$2,500.28. The cost of pulling out the boats was \$2,719.61.

The calking and general repairs to the boats necessary for the spring work was begun March 16 and completed April 15. United States steamer Sabrina, quarter-boat No. 1, 8 barges 25' by 100', and one derrick-boat were launched. When work was finished, in May, these pieces were left in the water.

SURVEYS.

A shore-line survey of the reach from Gray-back Island to the Bridge was made December 11 to 16, 1885, and a map thereof submitted February 25, 1886.

A survey of the slough in French bottom was made in April. A project, with map and drawings, was submitted May 5 for the drainage of the slough and the exclusion of overflow water from it.

MISCELLANEOUS.

In accordance with your instructions of March 2, the following data concerning the bridges at Atchison, Saint Joseph, and Omaha were collected and transmitted March 9, viz: The number and clear lengths of spans; the clear heights of trusses above known high water referred to Saint Louis Directrix, and profiles of the bed of river.

March 24 it was noticed that about 35' of the upper-bank mattress at the slough-crossing in Bonton Bend had sunk to the water's edge. A few days later the action extended up-stream until about 125' of the upper selvage edge was lying in the water. From the location, as well as from the time at which this occurred, *i. e.*, just after a freshet, it was thought that the action was due to a sloughing out of substrata of quicksand.

Soundings along the front showed a decided bulging out of the mattress without rupture, and that it was covered with silt and sand. Borings taken subsequently discovered quicksand from a depth of 8' below the surface of the ground to a depth of 46'.5, with but one intervening stratum of 12" of coarse sand. The upper bank was regraded, and a piece of mattress 60' by 150' woven over it. The old cables, of which but one was broken, were spliced and carried back to new deadmen. Sufficient weight of broken rock was distributed on the mattress to overcome the pressure due to the

quicksand. The river has since been as high as it was in the spring, and has receded without effecting any change in the work.

May 18 and 19 a curtain-dyke 150' in length was placed just below the lower end of the Bonton revetment to break up the severe eddy action caused by caving of the bank. It was successful.

A project, with estimates, for the completion of the improvements in this vicinity was submitted May 31.

Before closing I wish to acknowledge the valuable services rendered by Assistant Jos. C. Meredith, C. E.

Very respectfully, your obedient servant,

S. WATERS FOX,
Assistant Engineer.

Maj. CHARLES R. SUTER,
Corps of Engineers, U. S. Army,
President Missouri River Commission, Saint Louis, Mo.

APPENDIX D.

ANNUAL REPORT OF ASSISTANT SAMUEL H. YONGE.

KANSAS CITY, MO., *July 19, 1886.*

MAJOR: I have the honor to submit my report on operations conducted in this vicinity for the part of the fiscal year ending May 31, 1886, as follows, viz:

PREPARATIONS FOR WORK.

The work of revetting the bank in Kaw Bend had been suspended, on account of high water on June 20, 1885. Preparations for resuming this work after the subsidence of the flood were immediately afterward commenced. These consisted in recalking, as far as necessary, all the barges, graders, quarter-boats, &c.; erecting quarters on five old barges to be used as quarter-boats by the parties to be employed in procuring brush; getting the mattress-boats ready for service, by extending the mattress-ways and fitting up reels to carry the wire cables used in the construction of mattress; erecting coal-chutes on the river-bank at Kansas City, Mo., to facilitate the loading of barges with coal directly from the railroad cars; completing the outfits of quarter-boats, &c.

All brush-patches accessible by river for a distance of 80 miles below and 40 miles above Kansas City, Mo., were examined as to quality and quantity of brush, and arrangements made for purchasing such brush on the stump as appeared suitable for the work.

FLOATING PLANT USED.

The principal floating plant that was available for the work near Kansas City, Mo., most of which was towed up from Bushberg, Mo., by the latter part of July, 1885, the remainder being on hand, consisted in 6 hydraulic graders; 4 hydraulic pile-sinkers; 6 mattress-boats; 1 machine-boat with blacksmith shop; 4 large double-deck quarter-boats; 5 small single-deck quarter-boats; 41 barges 25' by 100'; 18 barges 16' by 64' (6 of these barges were in charge of Assistant Fox, at Saint Joseph, Mo., for about two months.)

Besides these boats, the stern-wheel tow-boats William Stone and Emma Etheridge and the steam-launch Melusina were employed for the purposes of the work.

All the plant mentioned above was used except 2 graders, 3 pile-sinkers, and 1 mattress-boat.

CONSTRUCTION MATERIAL.

Procuring brush.—There were five different parties employed in procuring brush, the first of which was started out on July 21, 1885, after which the others were sent out at intervals of from seven to ten days, the last one being sent out on September 3. The total force employed on this class of work at any one time amounted to about 220 men.

There was procured for the use of the work 14,159 cords of brush, at an average cost of about \$1.53 per cord, including all cost (purchase, cost on stump, labor, subsistence, wire for binding, &c.), except that of transportation by tow-boats. The price paid for brush on the stump amounted to 10 cents per cord.

All this brush was procured by hired labor and not by contract for the following reasons, viz:

(1) It is difficult for a contractor to fix a price for brush delivered at any landing, because it is in most cases nearly impossible to estimate, even approximately, the quantity of suitable brush in any one brush-patch. It is also difficult for him to hold a sufficient force of men to enable him under all circumstances to comply with the terms of his contract, as the work is very arduous; and also to keep his force supplied with provisions, &c., brush-patches being usually located at points inaccessible to the ordinary means of transportation. The usual summer rains and the consequent bad roads make the cost of hauling brush to a steamboat landing a very uncertain quantity, if they do not make such hauling altogether impossible.

To cover all these contingencies the contractor is compelled, in order to protect himself against loss, to place a much higher price upon brush than the one at which the Government can generally procure this material by hired labor.

(2) The failure of a contractor to furnish the quantity of brush required at any time would stop operations for the time being, and thereby materially add to the cost of the work.

The experience of the season's operations shows that a brush-party, in order to be of the most economical size, should consist of 46 men, including foreman, time-keeper, cooks, waiters and watchman, but not teamsters, and that such a party, taking into consideration time lost on account of bad weather, moving parties from one patch to another, sickness of men, &c., would produce on an average 50 cords of brush per day.

Of the 14,159 cords of brush produced during the season, 500 cords were hauled directly to the work by teams, the remainder, 13,659 cords, being transported in 88 barge loads for a total distance of 3,116½ miles for all barges, or an average of 35.4 miles per barge.

The load per barge varied from 118 to 247 cords, the average being about 155 cords.

The height to which barges were loaded depended, in a measure, upon the height of the bank from which the loading was done, but it was considered advisable on account of the cost of transportation not to load to a less height than 12', nor on account of the wind surface which might interfere with the towing to exceed a height of 14'.

On account of the rapid consumption of brush within a reasonable towing distance, if the work of constructing revetment is carried on on a large scale, it may in the course of time become necessary either to tow brush from great distances, or to establish brush plantations, although this will not be necessary for the coming season's work. It may be said in favor of the plan of establishing brush plantations on ground either leased for a term of years or purchased by the Government, that in this way brush of a more uniform character and in a greater quantity for a given area, and within shorter towing distances, could be obtained than has been the case heretofore, these advantages it is believed being more than sufficient to counter-balance the expense attached to establishing such plantations.

Procuring rock.—The rock used during the past season was limestone of fair quality, in pieces weighing from 25 to 150 pounds and varying in thickness from 4" to 8".

The contract for furnishing for the season's work 50,000 cubic yards of rock at 69½ cent per cubic yard was let to T. M. Hackett & Son. These contractors failed in every instance to furnish the quantities of rock ordered from them, as required by the terms of the contract, and thereby seriously impeded the work of sinking mattress and covering upper-bank mattress with rock. On account of this failure the contract was annulled on October 27, 1885. Arrangements were immediately made for the purchase of rock in the open market. This resulted in an agreement with Mr. G. T. Nelles to furnish rock, delivered on barges at the head of the work in Quindaro Bend at 75 cents per cubic yard, and also one with the Kansas City, Saint Joseph and Council Bluffs Railroad Company to furnish rock, delivered along the side of its track at the work in Kaw Bend, at \$7 per car load of about 10 cubic yards.

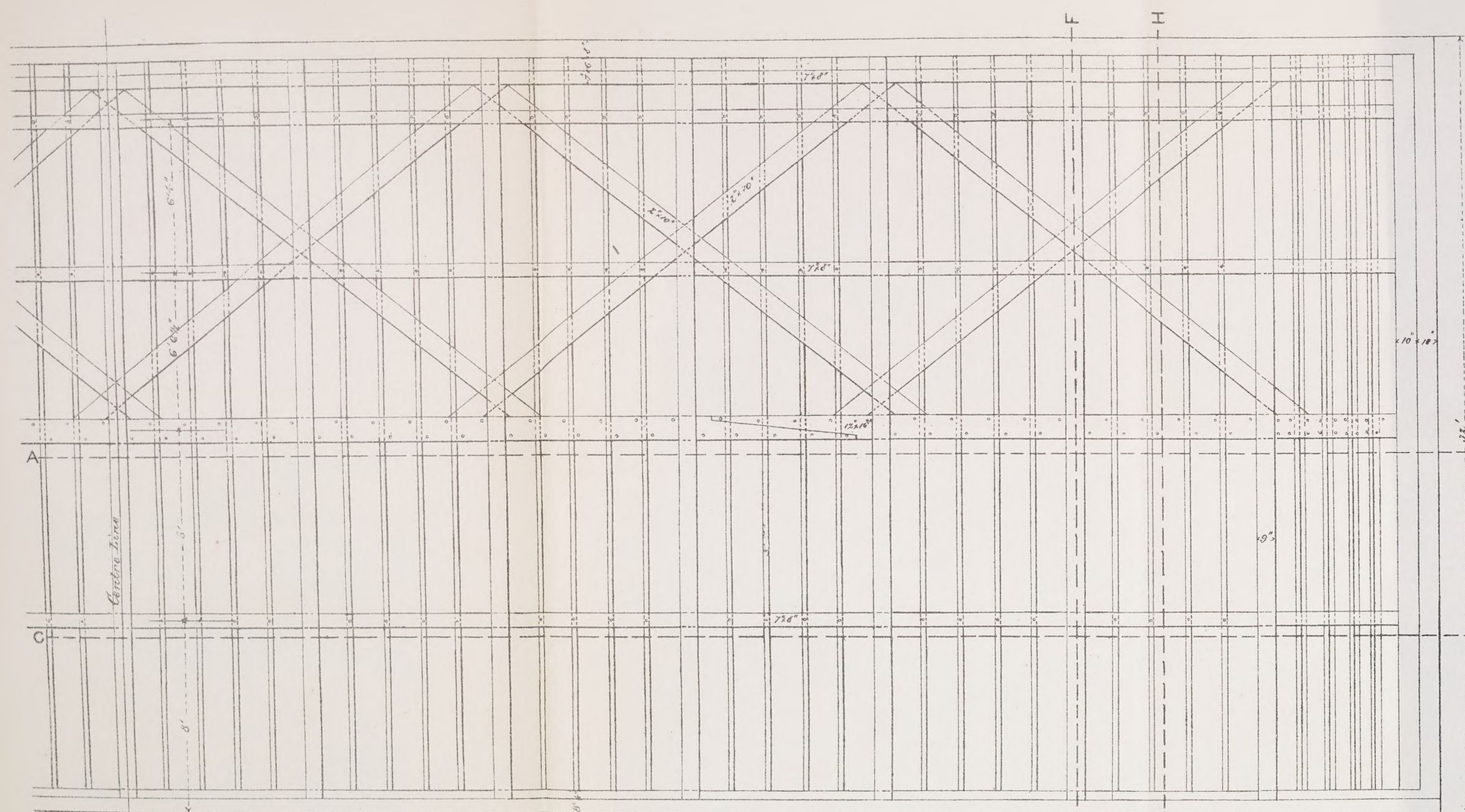
When it became impracticable to transport rock by barges, on account of ice in the river in the early part of December, 1885, another agreement was entered into with Mr. G. T. Nelles to furnish rock delivered on top of the bank at the work at Quindaro, Kans., at 95 cents per cubic yard.

The following quantities of rock were furnished by the different parties, viz:

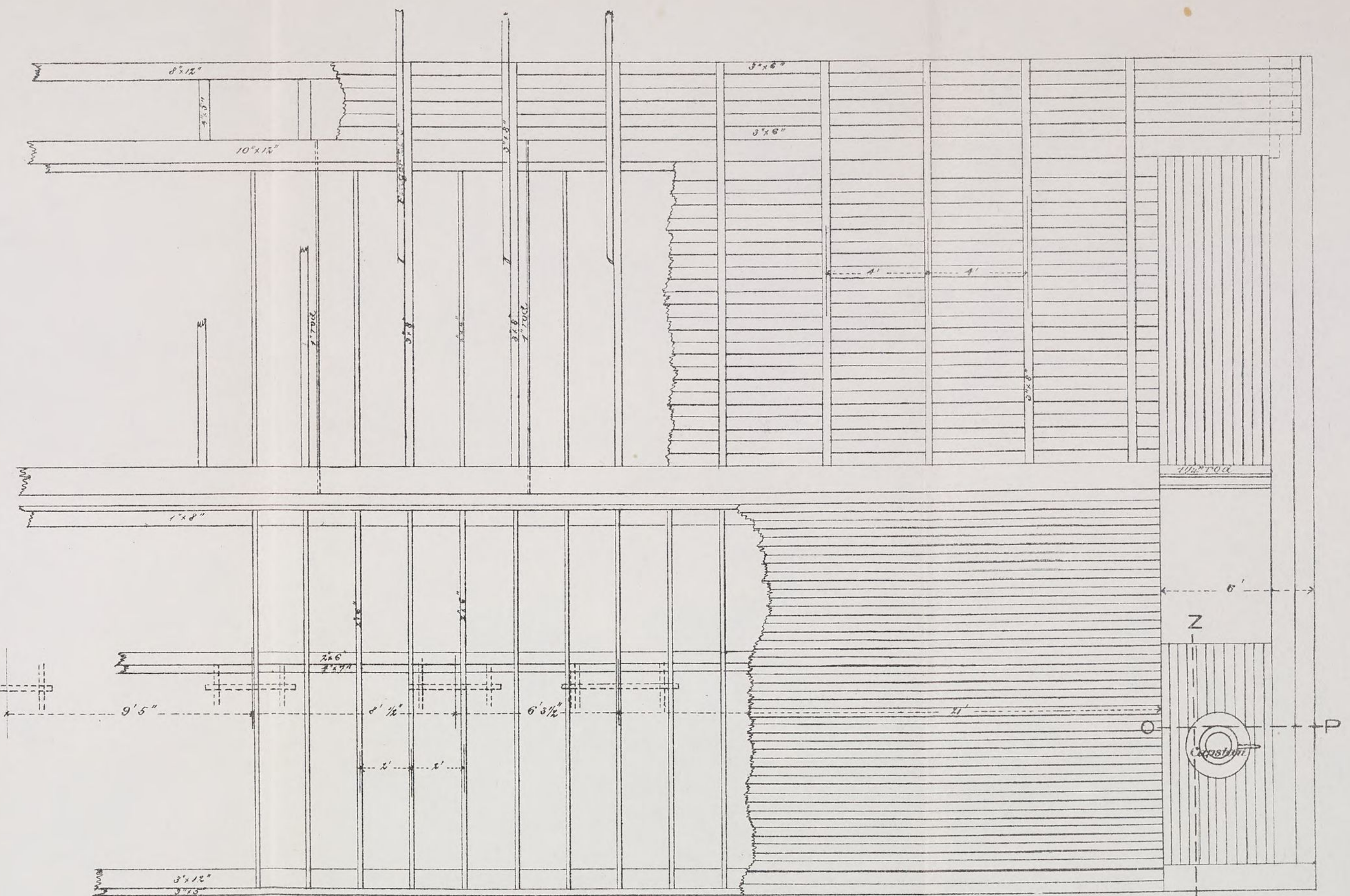
	Cubic yards.
T. M. Hackett & Son	8,918.92
G. T. Nelles, at 75 cents per cubic yard	10,285.70
G. T. Nelles, at 95 cents per cubic yard	6,803.78
Kansas City, Saint Joseph and Council Bluffs Railroad Company	8,459.48

Besides these quantities about 140 cubic yards of rock that was on hand on July 1, 1885, was used.

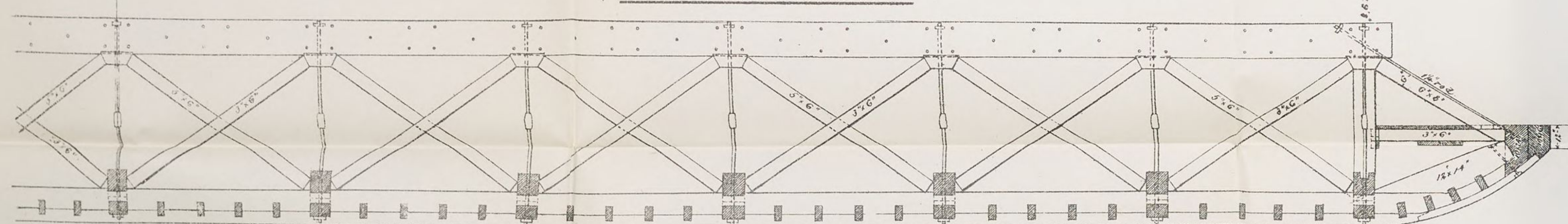
The average cost of rock per cubic yard delivered at the works, including inspection, hauling from railroad track, &c., but not towing, was 82.2 cents.



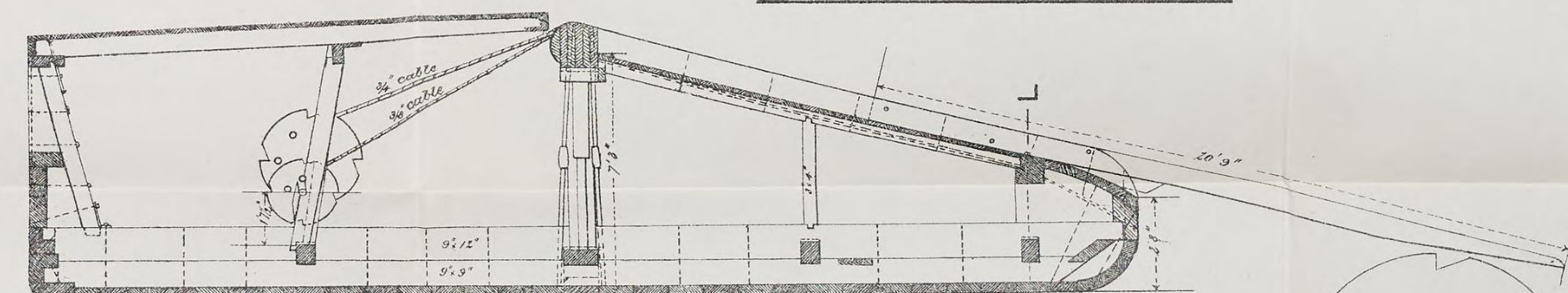
FLOOR PLAN BELOW DECK



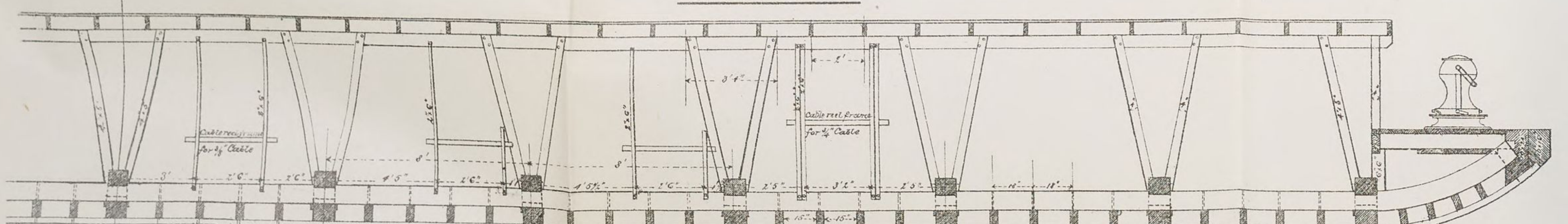
PLAN OF BACK PLATFORM AND WAYS



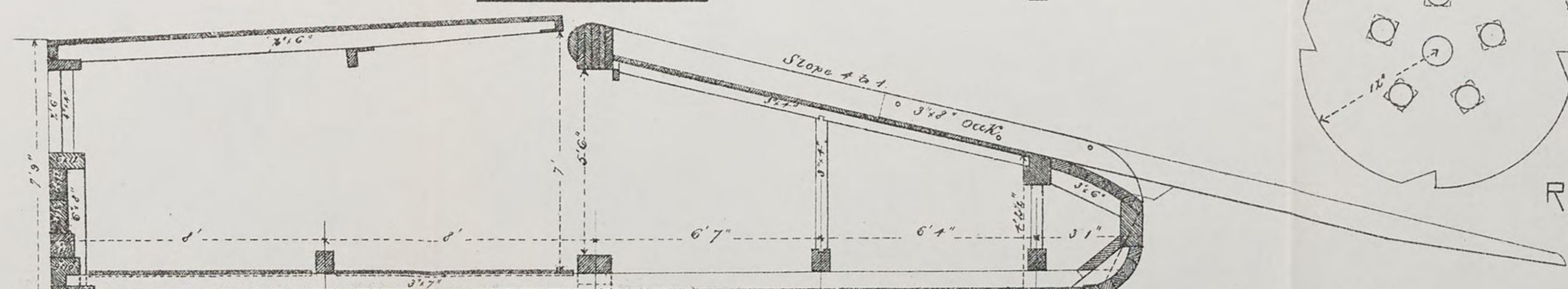
SECTION ON LINE A.B.



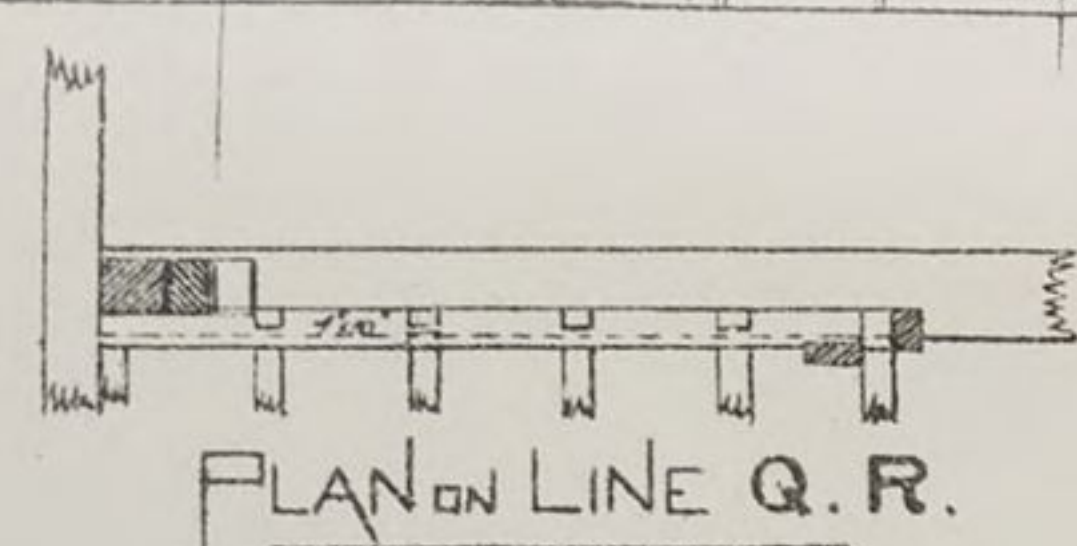
SECTION ON LINE E.F.



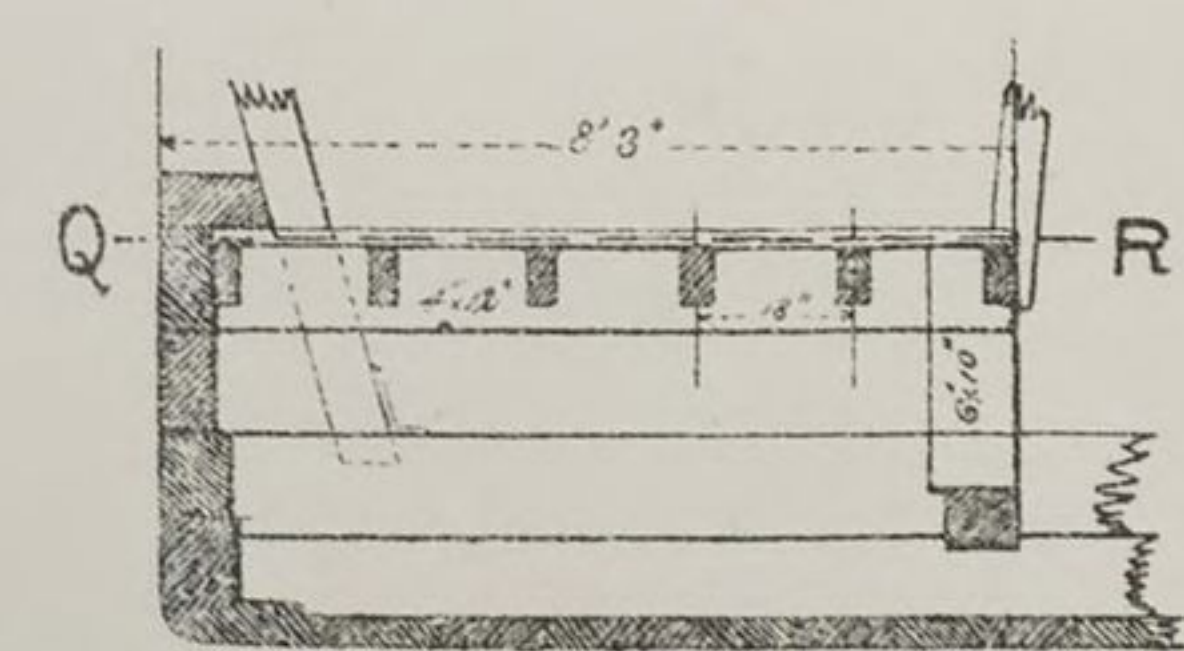
SECTION ON LINE C.D.



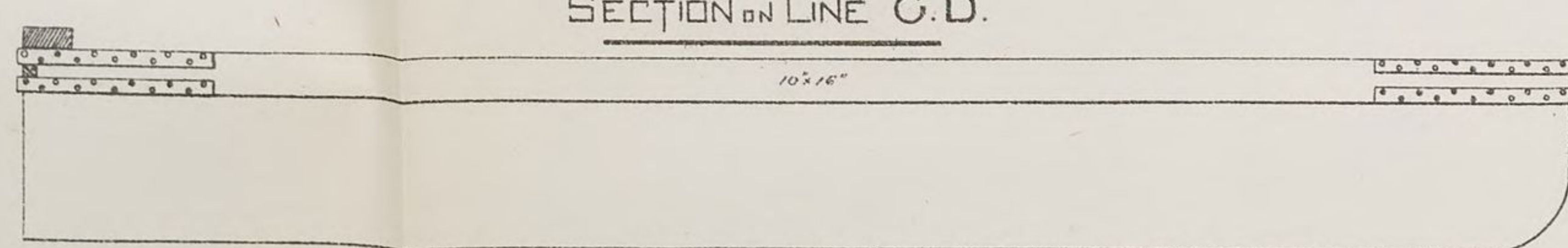
SECTION ON LINE G.H.



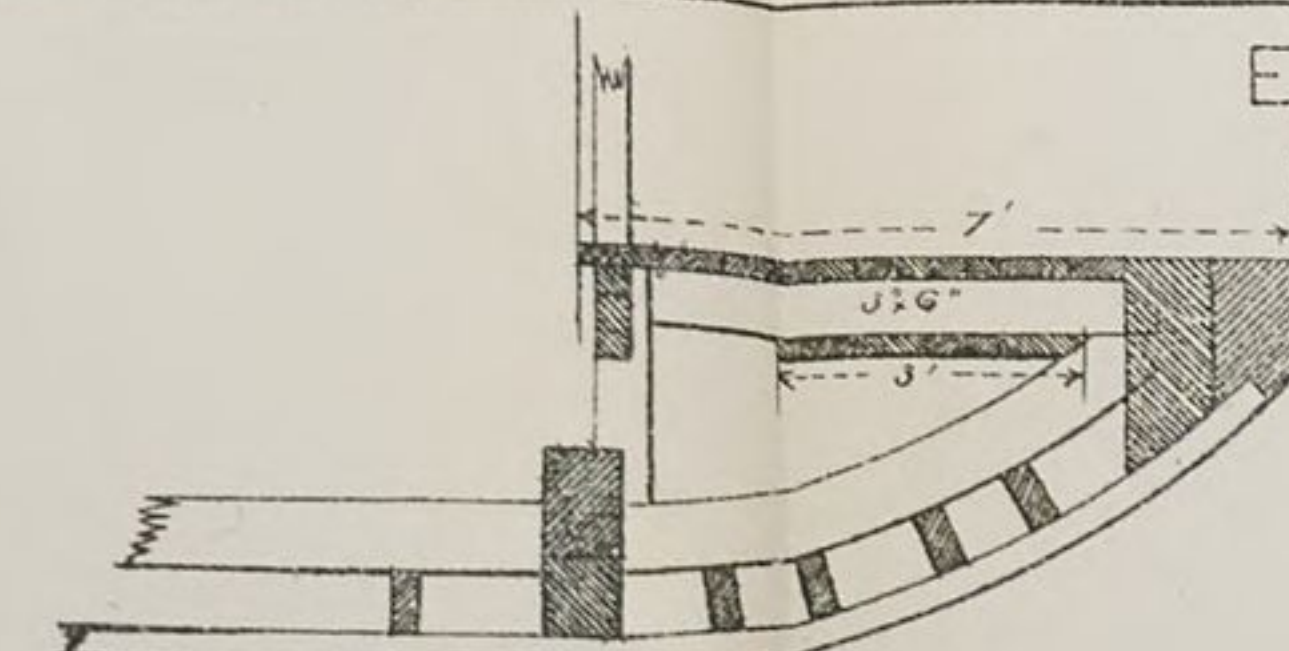
PLAN ON LINE Q.R.



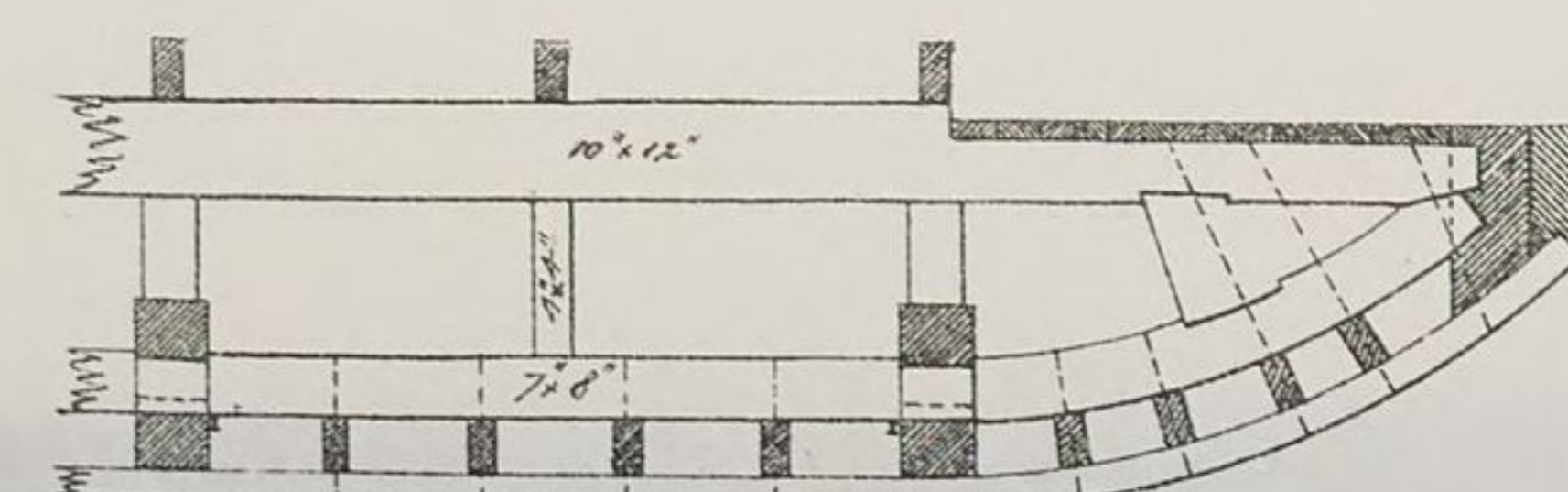
SECTION ON LINE M.N.



END ELEVATION

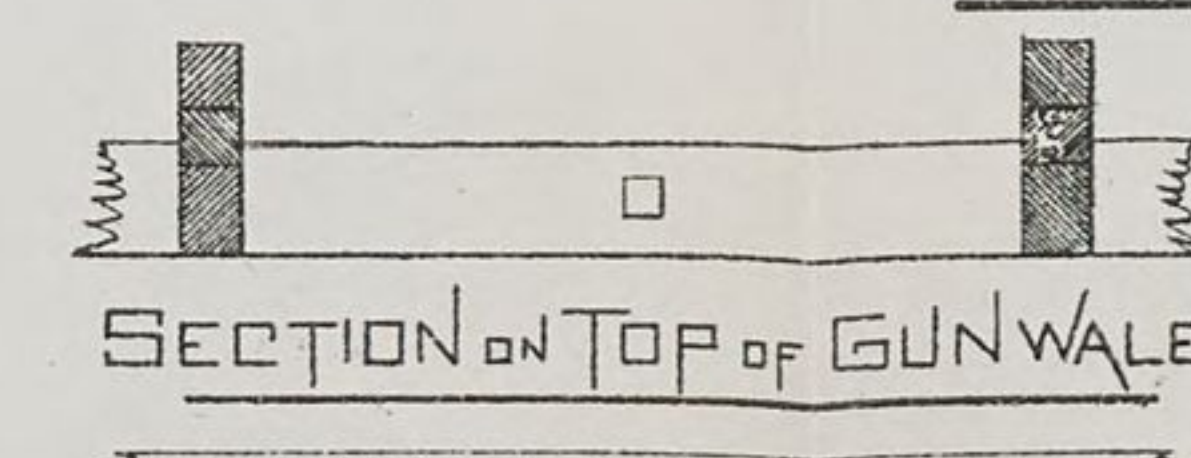
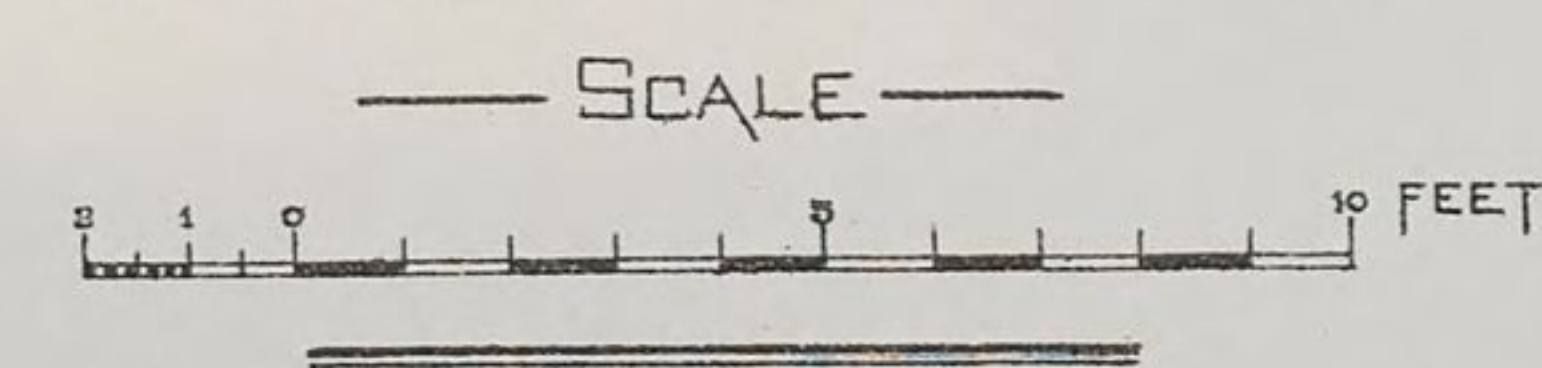


SECTION ON LINE O.P.

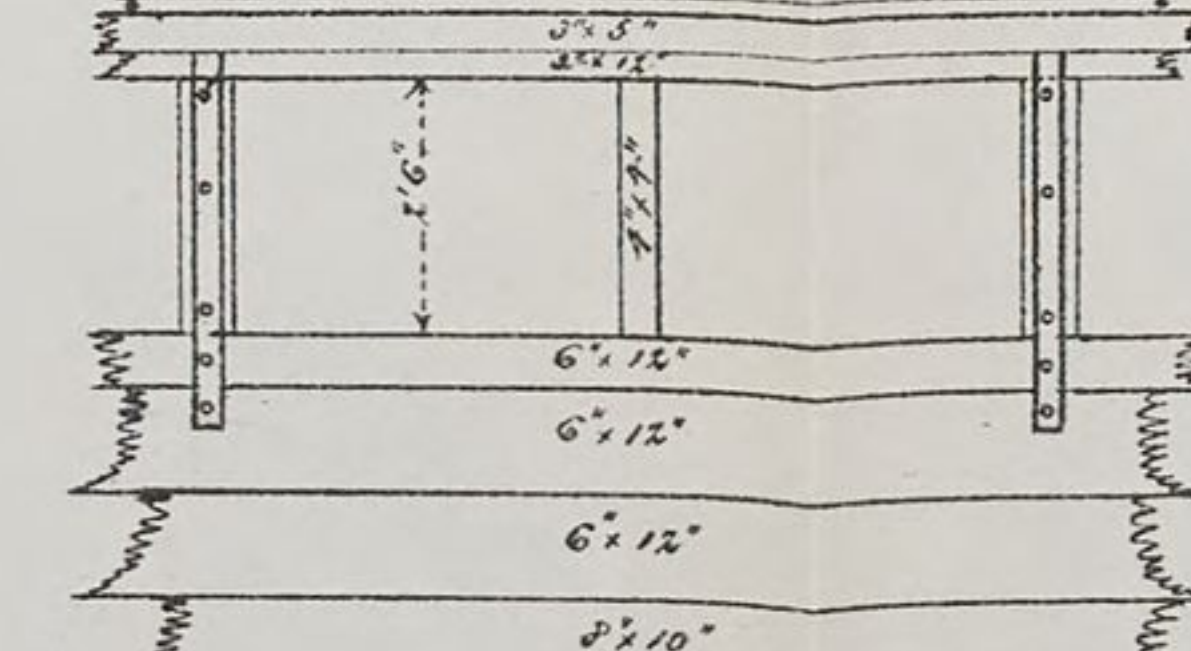


SECTION ON LINE K.L.

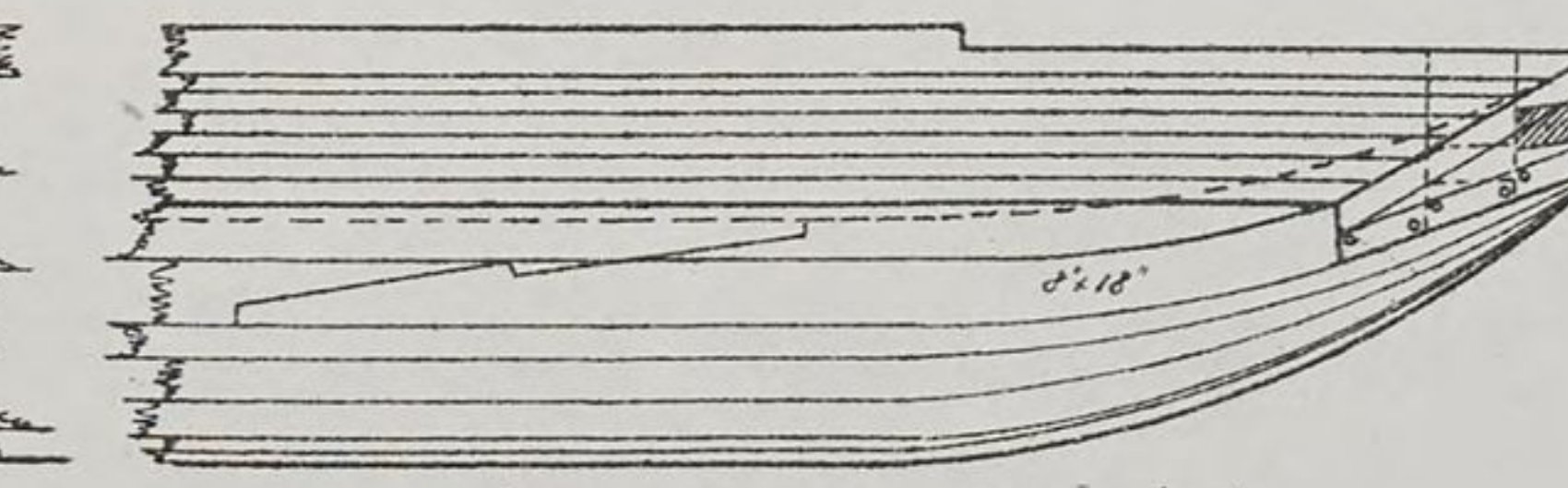
DETAILS OF MATTRESS BOAT
USED ON WORK OF IMPROVING MISSOURI RIVER
IN THE VICINITY OF
KANSAS CITY, MO.,
DURING SUMMER AND AUTUMN OF 1885.



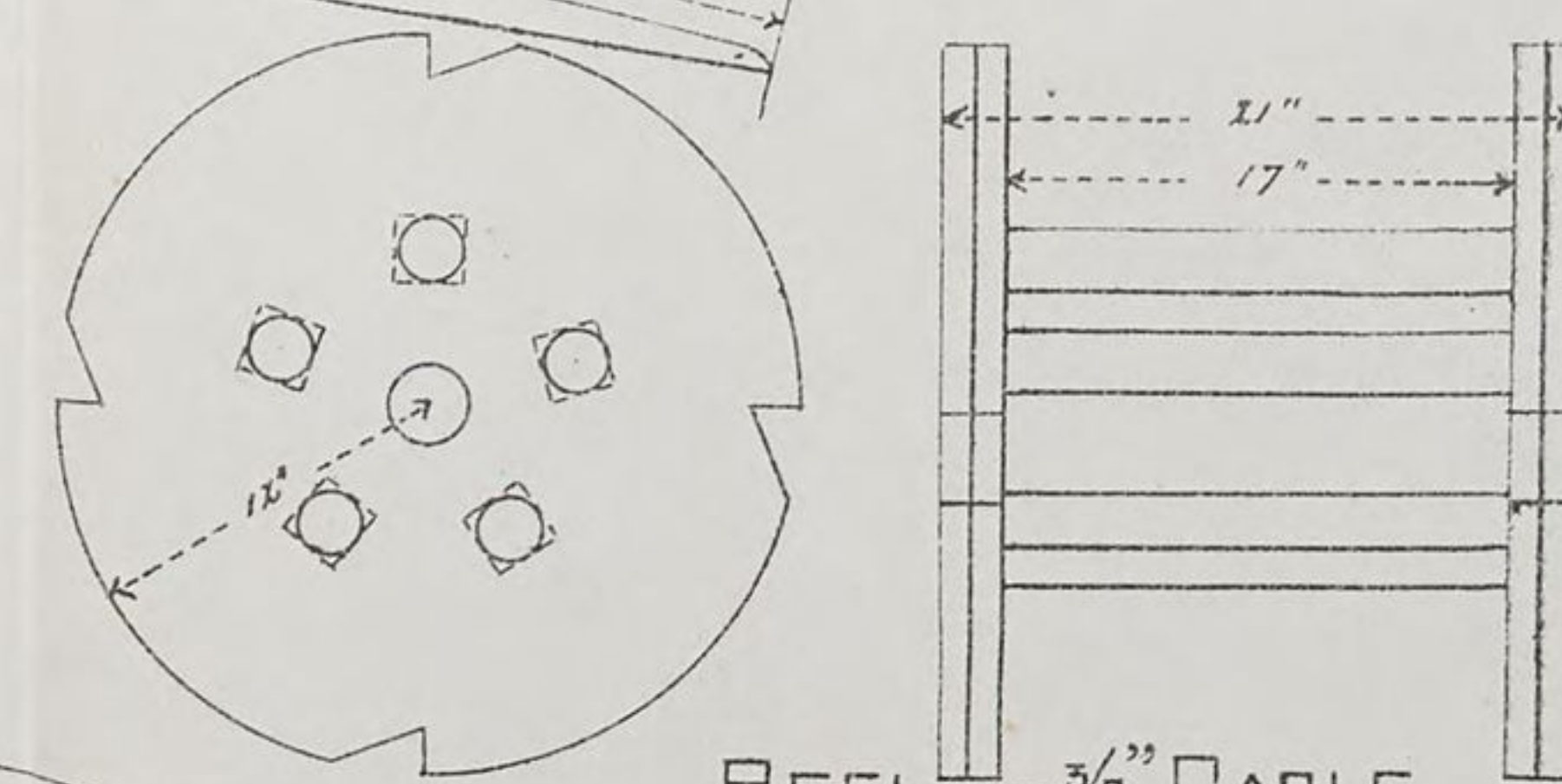
SECTION ON TOP OF GUNWALE



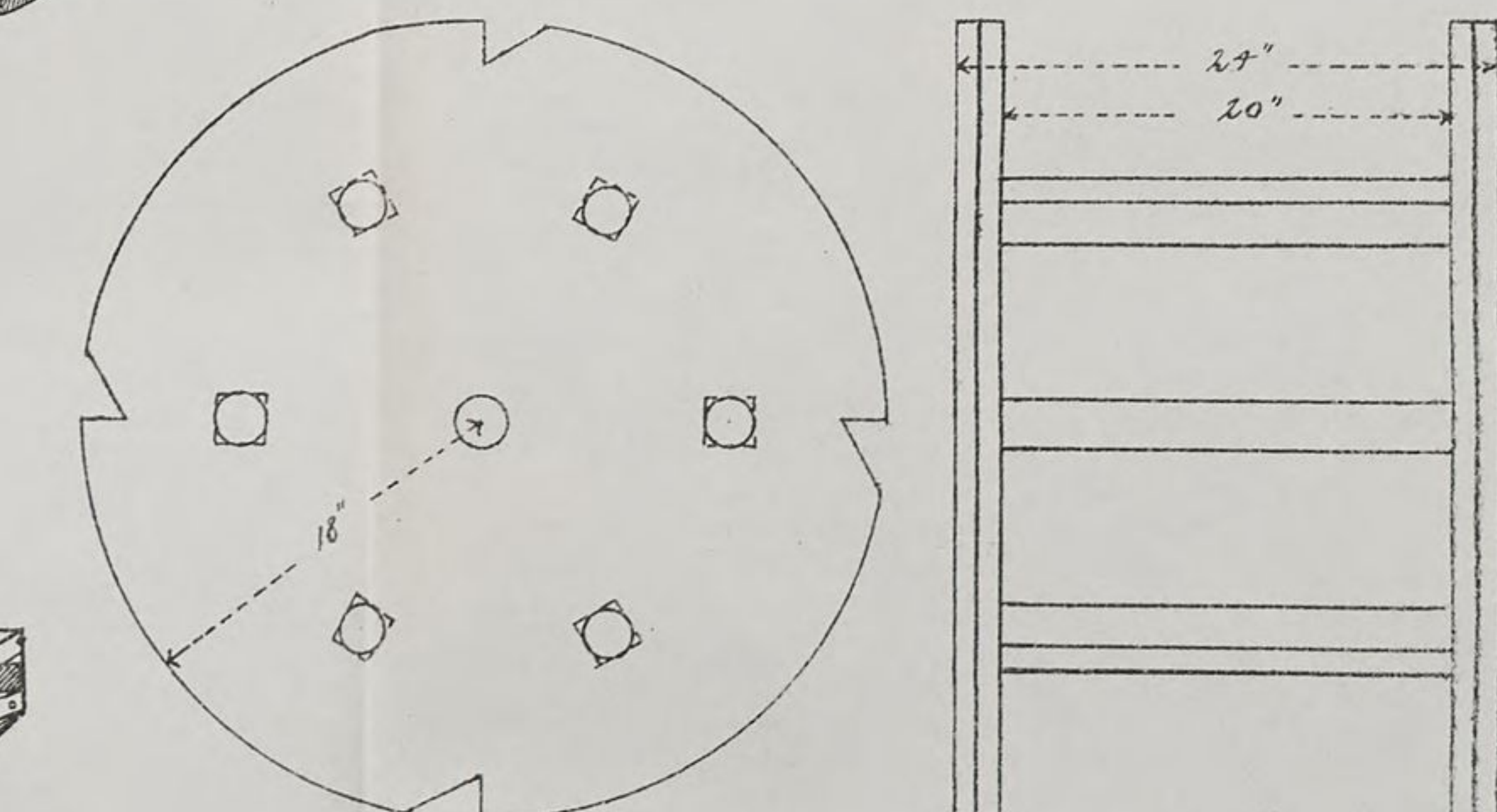
ELEVATION OF HIGH GUNWALE



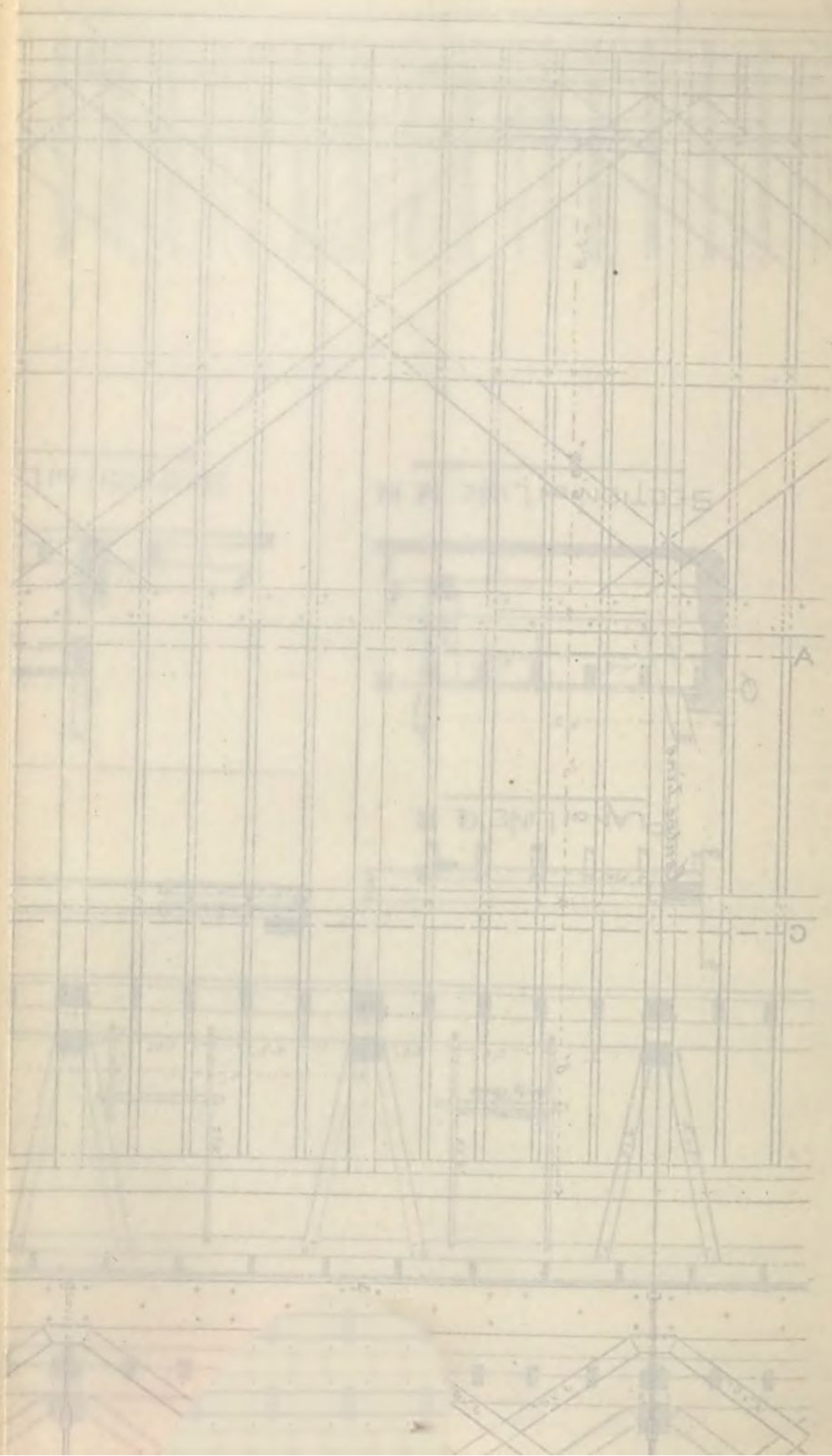
ELEVATION OF LOW GUNWALE



REEL FOR 3/8" CABLE



REEL FOR 3/4" CABLE



The rock delivered on barges, amounting to 19,204.62 cubic yards, was transported in 138 barge loads for a total distance of 1,074 miles for all barges, or an average of about 8 miles per barge. A barge load consisted of 125 to 168 cubic yards, depending upon the stage of water.

The past experience proves that it is of the utmost importance that the point of receiving rock should be situated as near to the work as possible, and in any event not at a greater distance than 12 miles, for the following reasons, viz:

(1) The number of barges needed for transportation of rock increases rapidly with an increased towing distance.

(2) During the autumn, at which season the greater part of the work is usually done, the depth of water on the crossings is generally not more than $3\frac{1}{2}'$ to $4'$, with a narrow channel, which renders it difficult for a tow-boat to handle a large tow of barges loaded with rock, which if loaded to their full capacity will draw 4 feet, and therefore it is desirable to have as few crossings between the work and the point of receiving rock as possible.

It also appears desirable generally to have the point of receiving rock below and not above the work, because a heavy tow can be handled more safely going up-stream than going down.

TRANSPORTATION.

The transportation for the work was furnished by the tow-boats William Stone and Emma Etheridge and the steam-launch Melusina.

From the early part of July to November 20, 1885, the two tow-boats were used for towing all brush and stone and in moving plant from one part of the work to another, and the steamer Melusina in transporting supplies, subsistence stores, and fuel. After November 20, on which day the tow-boats left this point for their winter harbor at Bushberg, Mo., the Melusina did all the necessary towing, inclusive of that of rock.

The towing capacity of each one of the two tow-boats is about five 100' barges loaded, but on account of the dangers of navigation in this part of the river it was not considered advisable by the masters of these boats to tow at one time during fair stages of water more than three, and during low stages more than two loaded barges.

It would appear from this circumstance that ordinarily tow-boats of more power than is necessary to tow three loaded barges cannot be used to great advantage in this part of the river.

The steamer Melusina proved herself of sufficient power to tow one 100' barge loaded with rock, and was a valuable accessory to the work, especially as she was often able to run when the larger boats were prevented from doing so by high winds.

The 100' barges, used in transporting rock and brush, answered in every respect the purposes for which they were used.

One of these barges, No. 79, loaded with rock, was sunk on September 23, 1885, by striking a snag in the lower part of the bend below Pomeroy, Kans., while in tow of the steamer Emma Etheridge. Efforts were made to raise the barge, but without success.

The 64' barges were used in transporting coal, supplies, lumber, &c., and answered this purpose satisfactorily, although they could not be used for transporting rock and brush as advantageously as the larger barges, on account of the danger of their being towed under while in tow of the large tow-boats.

SUBSISTENCE.

The subsistence department for field parties engaged in procuring construction material, constructing revetment, &c., was carried on by hired labor, the stores being purchased in open market and transported to the parties by the steamboats. The different parties were quartered, in the case of those employed on construction work, on large double-deck quarter-boats with sleeping accommodations for about 130 men each, and also on graders and small quarter-boats, all being subsisted on the large quarter-boats, in one instance to the number of 175 men on one boat; and in the case of brush-parties, on small, single-deck quarter-boats, with sleeping accommodations for from 32 to 60 men each.

The large quarter-boats were found to answer the purpose for which they were designed admirably. The following changes, however, are recommended to be made in their arrangement, and have already been made on quarter-boat No. 3, viz: The ice-boxes to be moved from their present locations, near the kitchen-ranges, to the end of the boat, to prevent the too rapid consumption of ice and to give more room in the kitchen. The 20' tables in the laborers' mess-room, which are now placed lengthwise in the room, to be replaced by 10' tables to be placed crosswise, for the purpose of increasing the seating capacity.

It is also suggested that on account of the rapid deterioration of tin table-ware,

heavy china ware and crockery be substituted, as far as practicable, as fast as the tin-ware now in use becomes unserviceable.

The crew of the subsistence department of each one of the large quarter-boats consisted of one steward, one head cook, two second cooks, and a waiter for about every 20 men; of each one of the small (brush) quarter-boats, of one head cook, one second cook, and one waiter, the time-keeper acting also as steward.

The cost per meal, including labor, subsistence of subsistence crew, subsistence stores, fuel, ice, cleaning of boats, &c., varied from 11 to 15 cents, the average being 13.34 cents during the season of active operations.

CONSTRUCTION OF REVETMENT—GRADING.

The hulls of the hydraulic graders used on the work are 80' by 20' by 4' 10'', with yellow pine gunwales and decking and oak bottoms, and so constructed as to make them very rigid. A Providence steam-capstan is placed near the forward or pump-end of the boat and a hand-capstan of the same make near the stern, both being used for the purpose of moving the grader, &c. The machinery is sheltered from the weather by a building 15' by 55', erected on the deck of the boat. On the top of this building is placed a cabin 15' by 25', fitted up with sleeping accommodations for the grader crew. Two light derricks placed at the forward corners of the building and attached to the hull of the boat were used in manipulating the hose.

The machinery consists of a powerful steam-pump, supplied with steam from a boiler of the locomotive type, with a diameter of shell of 48'', and 54 tubes 3'' in diameter by 9' 5'' long. The fire-box is 4' 6'' long by 3' 5'' wide. These boilers gave satisfaction, and furnished an abundance of steam without forcing for the highest pump-pressure that could be used without bursting the hose.

The pumps on the four graders used during the season, with the exception of the Davidson pump on Grader No. 4, which has a single cylinder, are duplex, and all have outside plungers, compound steam cylinders and condensers, and are of the following description, viz:

Grader No. 4.—Davidson pump; water cylinder 12'' by 24'' stroke.

Grader No. 6.—Blake pump; water cylinders 10'' by 18''.

Grader No. 7.—Knowles pump; water cylinders 10'' by 18''.

Grader No. 8.—Gordon & Maxwell fly-wheel pump; water cylinders 10'' by 12''.

Graders Nos. 3 and 5 were not used, as only five mattress boats were put in operation, and not six, as originally contemplated; and, moreover, one grader was frequently enabled to do the grading for two parties on account of their close proximity to each other.

The water supply was taken from the river through wells 5' by 24'', built into the hulls of the graders. Each well is divided into two compartments by a movable wire screen placed vertically, one having a bottom of perforated boiler-plate and the other a solid bottom, and in this latter compartment the suction-pipe is placed.

Although this arrangement in so far answered its purpose that it prevented coarse drift from entering the pump, the boiler-plate screen very often became clogged with rubbish, especially when the grader was at work immediately below mattress parties. Whenever this occurred the pump had to be stopped, either to allow the current to carry off the rubbish or to remove the latter by hand.

Another source of trouble was experienced while working in shallow water, or when the current was not strong enough to carry off the earth excavated from the bank in grading, in which cases considerable sand and mud was sucked up into the pump. It also occurred sometimes that some of the rubbish sucked up into the pump lodged under the valves and thereby diminished its efficiency. The remedies which it is thought may, in a measure, overcome these objectionable features are either to enlarge the pump-well, or, what appears to be still better, to abandon this detail, and use instead the suction with a basket-strainer on the outside of the boat, as formerly used, when these difficulties were not experienced to such an extent.

The diameter of suction-pipe on all the pumps is 8'', and that of the discharge at the pump 8'', reduced by means of reducers from 8'' to 6'', and again at the side of the boat from 6'' to 4'', to connect with the 4'' hose used to convey the water to the bank, which consisted usually of three, and in some rare instances of four, 25' sections.

The section of hose nearest the pump was supported between the boat and the shore by a plank swung from one of the derricks. (See Sketch No. 1.) This arrangement was advantageous, as it facilitated the moving of the hose along the bank.

In this connection it may be said that, owing to the difficulty of moving the heavy hose over the slippery and muddy bank during the grading, much time could be saved, and wear and tear on hose prevented, by using a 6'' wrought-iron boom-pipe, supported on either side of the boat by one of the derricks.

A 1½'' brass nozzle-tip, attached to a 4'' play-pipe, was used in grading. The brass tips were found to cut out very quickly from the sand in the water. To overcome this difficulty 1½'' tips were bored out and bushed with ½'' by ⅜'' steel rings, turned

SKETCHES.

Fig. 1.

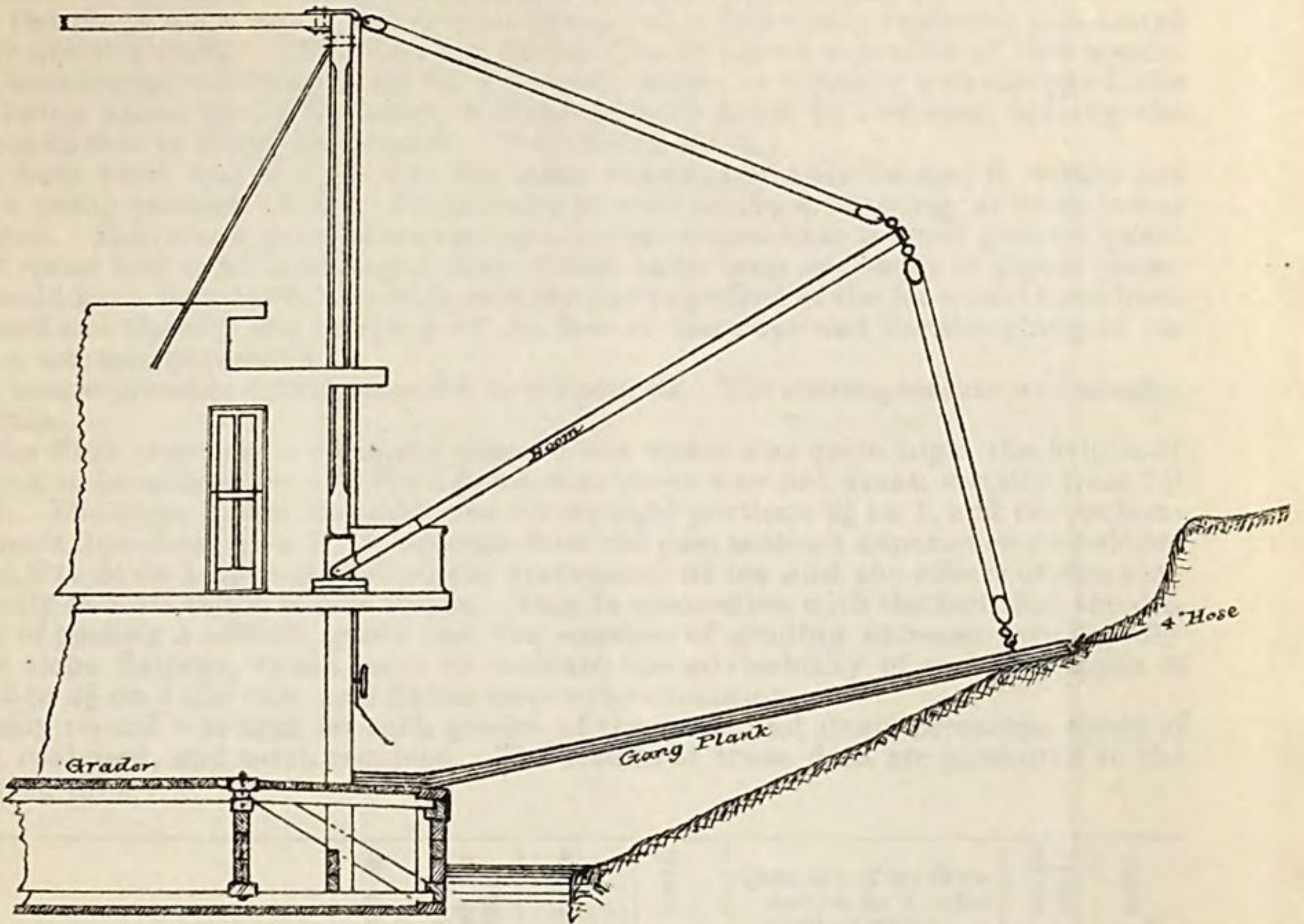


Fig. 2.

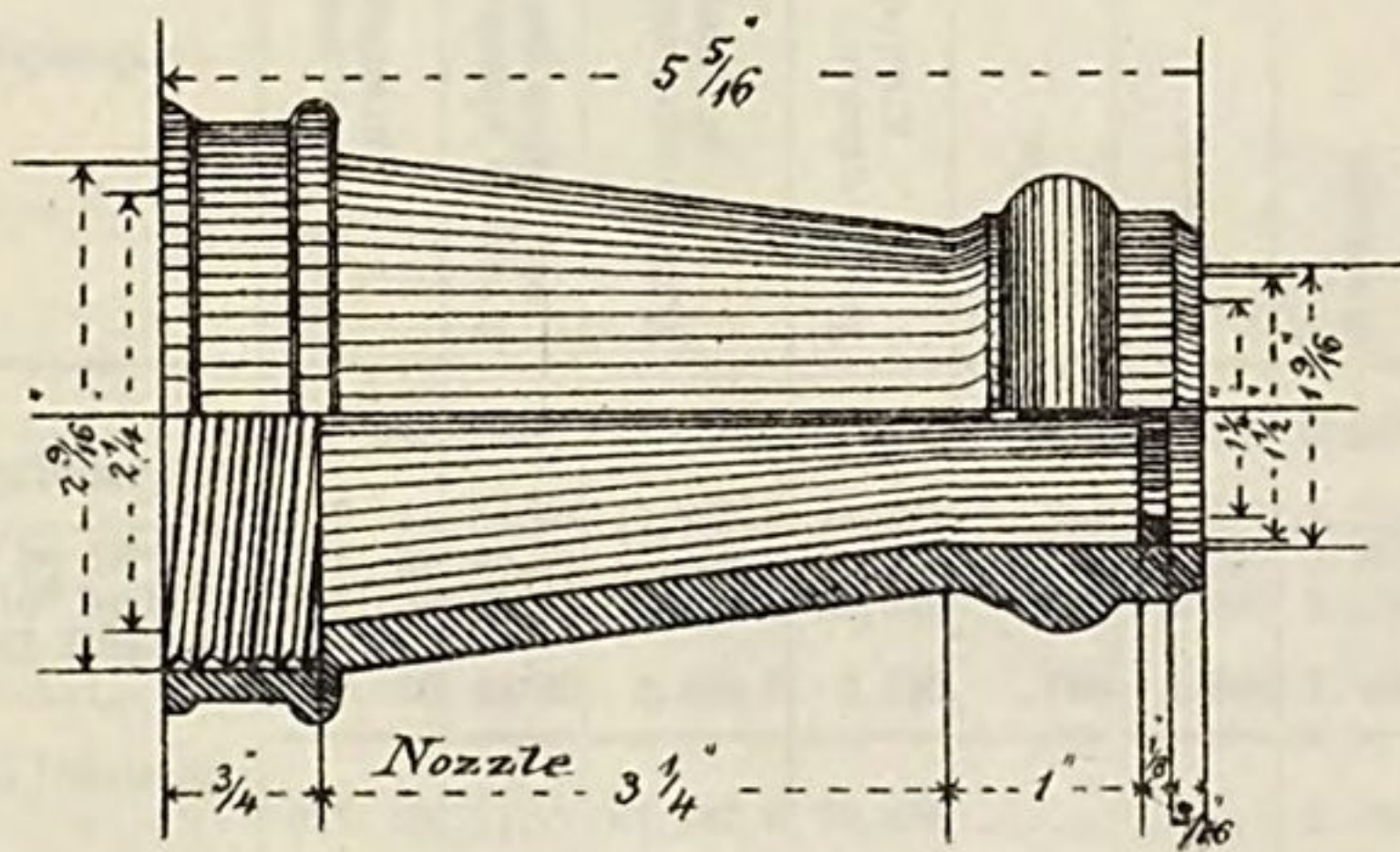
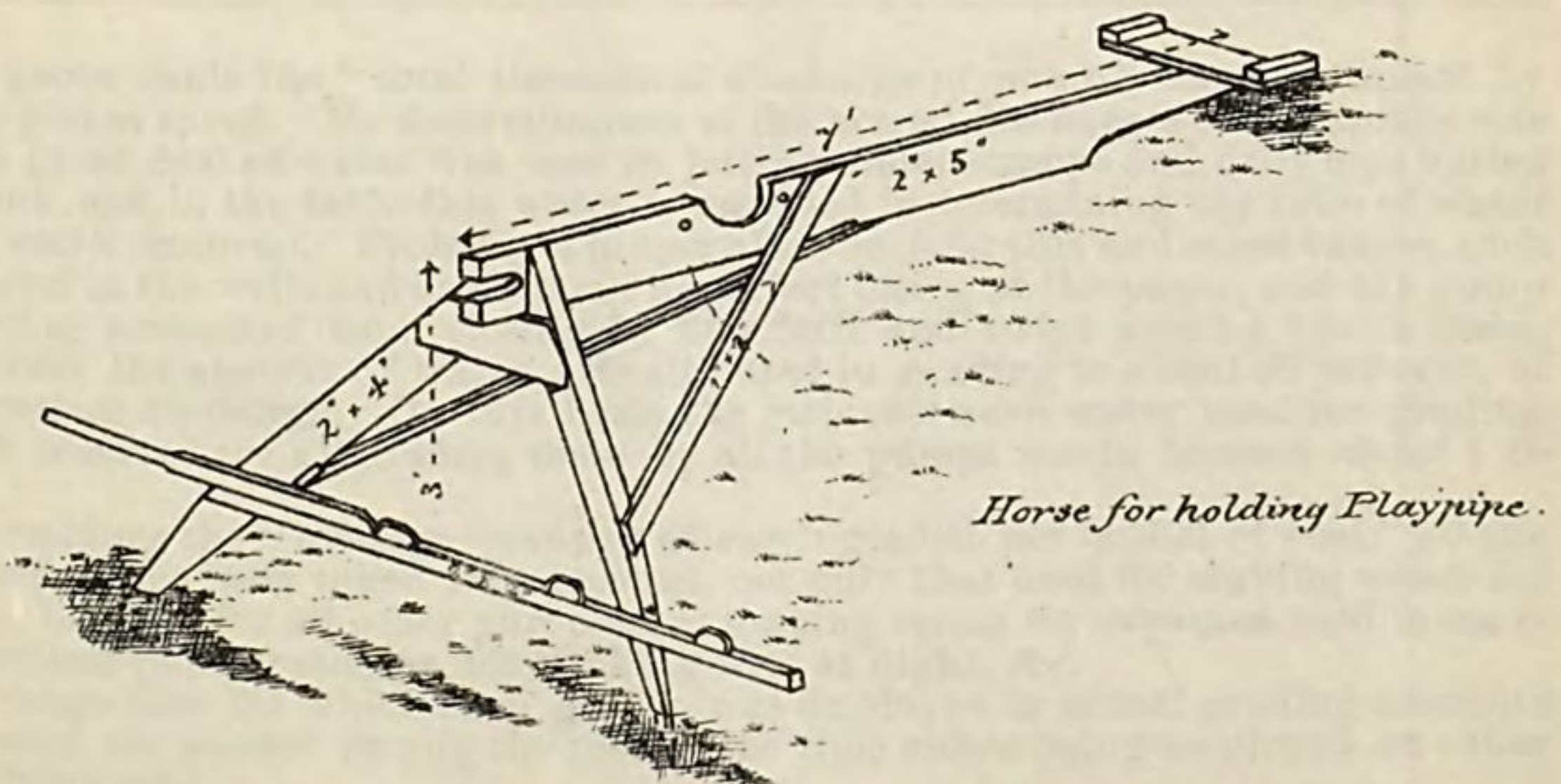
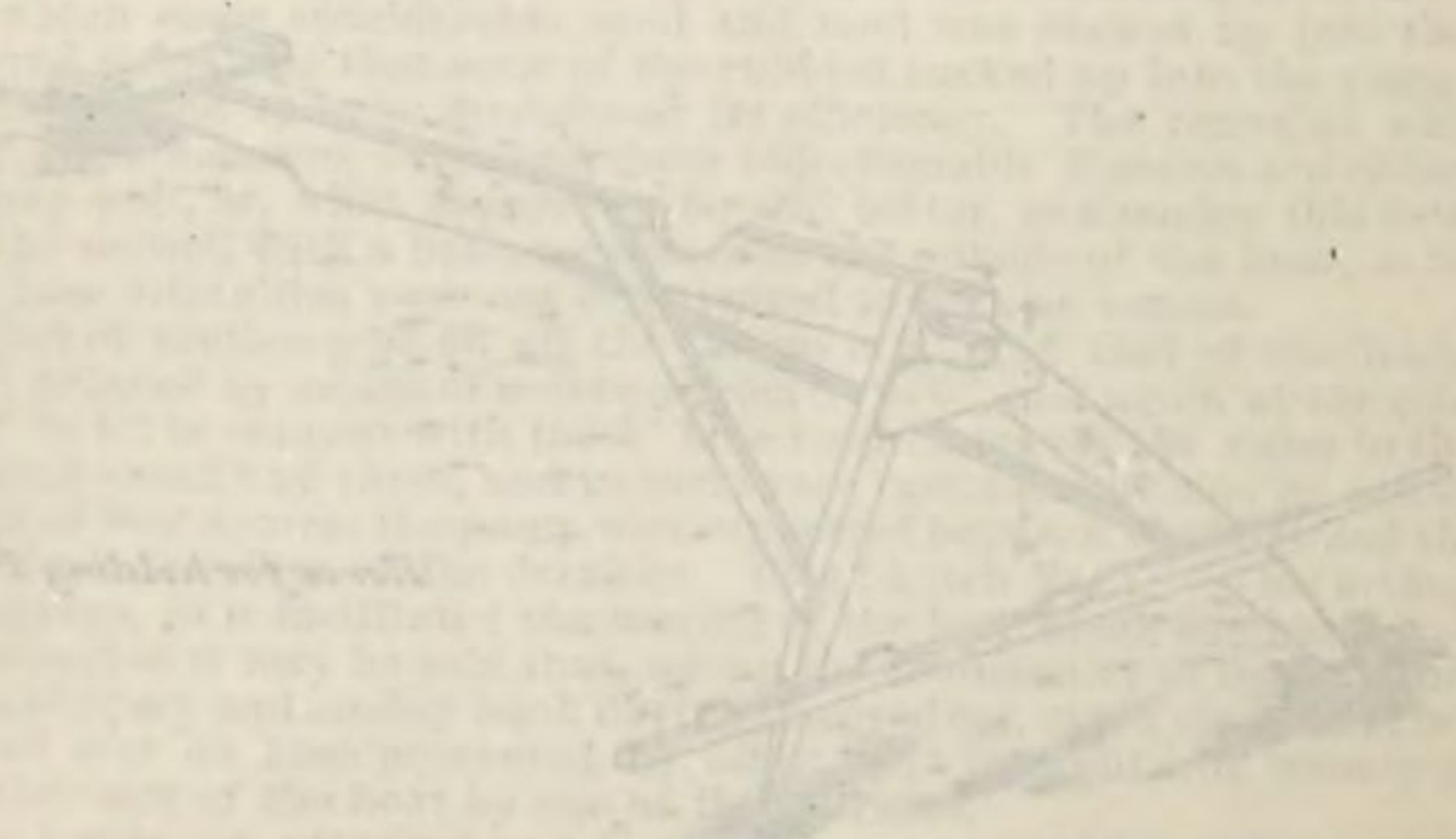
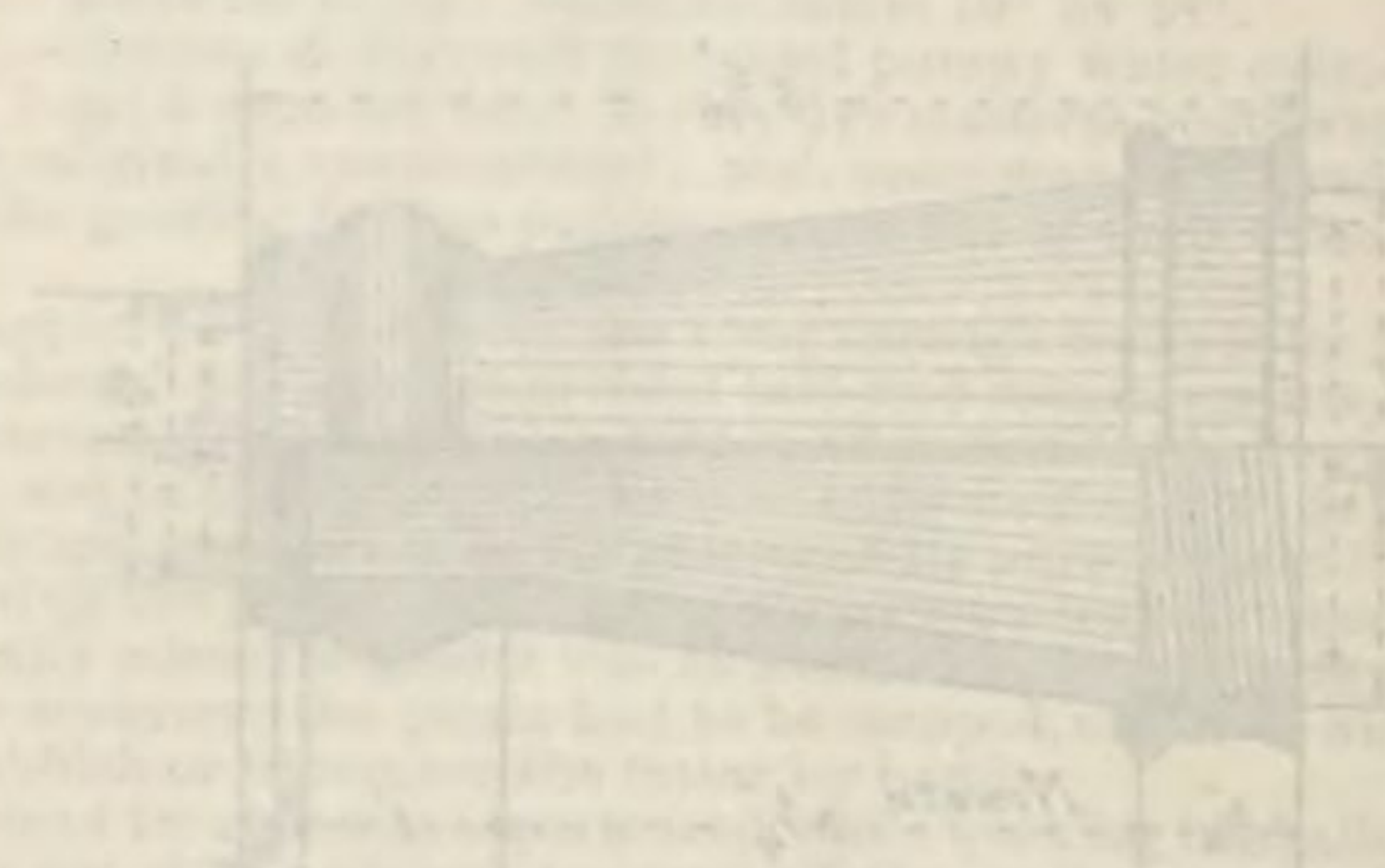
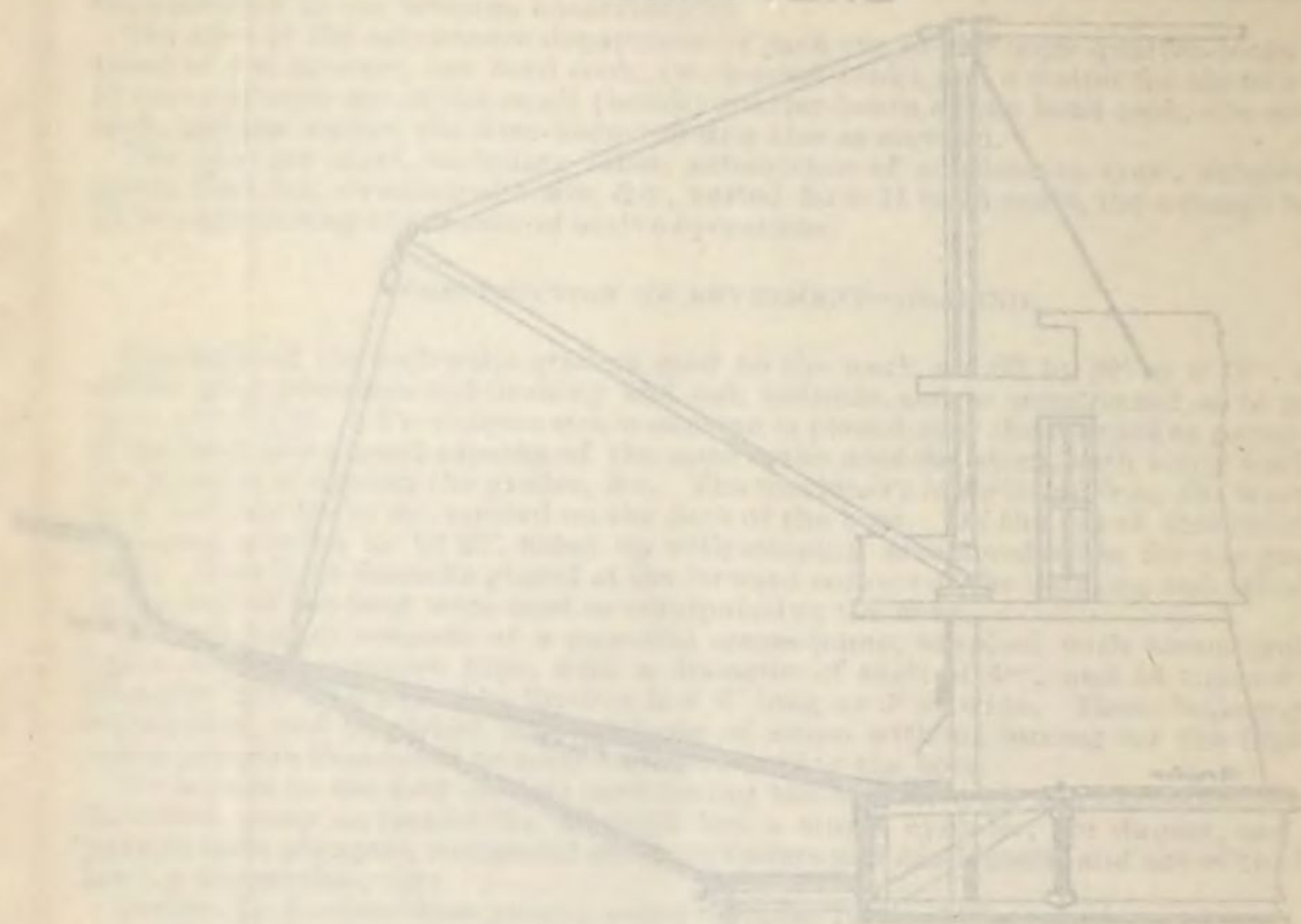


Fig. 3.



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SKETCHES



true, with sharp edges. The jet from such a nozzle sprayed very little for about 20 while the rings were new. These were inexpensive and easily replaced, and lasted usually about a week. The following sketch (No. 2) shows a section of this nozzle.

The nozzle-pipe was supported by a wooden horse, to which it was strapped, the recoil being taken up by the horse, which was held down by two men, leaving the nozzle-man free to direct the stream. (See Sketch No. 3.)

The hose used was six-ply, but for some reason, probably its age, it would not stand a pump-pressure of over 120 pounds, several sections bursting at even lower pressures. This was a great disadvantage, for the reason that a much greater quantity of water had to be discharged than would have been necessary if higher pressures could have been used, in which case the cutting effect of the jet would have been increased and thereby the gullying of the face of the slope and the sloughing of its toe in a measure prevented.

The nozzle-pressure varied from 100 to 107 pounds. The steam-pressure was usually 90 pounds.

As the work was begun when the stage of the water was quite high, the height of the bank to be graded for the Kaw Bend revetment was not great, usually from $7\frac{1}{2}'$ to $10\frac{1}{2}'$. The slope given the bank was for straight portions $2\frac{3}{4}$ on 1, and for projecting points from 3 to $3\frac{1}{2}$ on 1. It appears from the past season's experience that slopes of from 2 to $2\frac{1}{2}$ on 1 have withstood the movements of ice and the effects of the current fully as well as the flatter slopes. This, in connection with the fact that the difficulty of getting a smooth grade and the expense of grading increase very rapidly as the slope flattens, would seem to indicate the advisability of making slopes of from 2 to $2\frac{1}{4}$ on 1 the rule, and flatter slopes the exception.

A daily record was kept for each grader, of the water and steam pressures, speed of pump, coal used, and earth removed. The results of these data are presented in the following table:

Number of grader.	Description of pump.	Total time employed in grading.	Average piston-speed for one piston per minute.	Total theoretical discharge of pump.	Total quantity of earth graded.	Quantity of earth removed by 1 cubic yard of water.			Average quantity of earth graded per bushel of coal.	Average quantity of earth graded per hour.
						Minimum.	Maximum.	Average.		
		<i>h. m.</i>	<i>Feet.</i>	<i>C. yds.</i>	<i>C. yds.</i>	<i>C. yds.</i>	<i>C. yds.</i>	<i>C. yds.</i>	<i>C. yds.</i>	<i>C. yds.</i>
4	Davidson single cylinder, 12" by 24"	122 54	64.47	13,829.2	15,371	.644	1.888	1.1115	22.13	125.07
6	Blake Duplex, 10" by 18"	158 40	45.11	17,350.9	20,603	.767	2.259	1.1870	18.36	129.85
7	Knowles Duplex, 10" by 18"	217 59	51.41	27,167.0	31,879	.656	2.065	1.1734	19.18	146.25
8	Gordon & Maxwell Duplex, 10" by 12"	28 18	40.83	2,800.7	3,105	.790	1.664	1.1086	20.70	109.72
	Averages and totals for all graders.....	527 51	.....	61,147.8	70,958	.....	.....	1.1604	19.55	134.43

In the above table the "total theoretical discharge of pump" was determined by using the piston speed. No determination of the actual discharges of the pumps was made. A great deal of water was used in jetting under stumps and drift logs buried in the bank, and in the table this water is included in determining the ratio of water used and earth removed. Probably a proper allowance for this and other causes, such as low water in the wells and consequent imperfect filling of the pump, and the pump valves being prevented from closing by fine drift and twigs getting under them, would reduce the amount of water actually used in grading to about 80 per cent. of the theoretical discharge. On this basis the ratio between water used for grading and earth removed for all grading done by all the pumps would become about 1 to 1.45.

In determining the "average quantity of earth graded per bushel of coal," all the coal consumed has been taken into account, not only that used for making steam for the pump, but also for all other purposes, as making steam for capstans used in moving grader and pulling stumps, for banking fires at night, &c.

The average time for which each grader was employed in actual grading amounts to five hours, the grader during the rest of the time either being employed on other work or lying idle.

The total quantity of earth graded at Kaw Bend amounted to 23,421 cubic yards, at Quindaro Bend to 51,998 cubic yards, at an average cost of about $4\frac{1}{2}$ cents per cubic

yard. The fact that this cost is so much higher than that of the work done in 1882 is accounted for by the slope given the bank being flatter, and also by the circumstance that in 1882, when the grading could be carried on at a very low stage of water, it was possible to do nearly all the grading continuously and carry it to its completion, after which the grader was laid up and the crew discharged, while in last season's work the grading could not be carried more than 100' ahead of the mattress work; as otherwise the graded bank would have sloughed out before the mattress party could reach it, and therefore the graders had to be kept in service during the whole time the mattress was being constructed.

MATRESS WORK.

As soon as the summer flood had abated sufficiently to allow the work to proceed, the construction of revetment in Kaw Bend was resumed. The first mattress party commenced work on August 3, 1885; two other construction parties were put to work at intervals of about two weeks, it generally requiring about that length of time to get a sufficient number of men trained as brush-weavers to form a nucleus for a mat-gang.

The essential details of the mattress constructed at Kaw Bend during the summer were the same as for that constructed during the preceding spring. The section of mattress immediately adjoining the spring work and extending down-stream to the last of the series of dikes built by the Kansas City, Saint Joseph and Council Bluffs Railroad Company, with a length of about 1,300' and an average total width of about 93', the low water portion having a width of about 60', was constructed from a 60' barge laid at right angles to the bank, with a smaller barge, 24' long, laid between the larger barge and the shore, both boats having temporary mattress-ways.

The mattress was strengthened by a system of cables and wires running longitudinally and transversely with it. The longitudinals consisted of one $\frac{3}{4}$ " cast-steel wire-rope of seven strands No. 11 B. G., with a strength of 2,787 pounds per wire, placed at the stream edge of the mat, and five intermediates, consisting of No. 6 cast-steel wire, with a strength of 5,500 pounds each, placed at intervals of about 10'.

The principal transversals were placed at intervals of 90', and consisted of $\frac{3}{4}$ " cast-steel wire-rope as described above. The intermediate transversals were placed at intervals of 15', and consisted of No. 6 wire, of the same kind as used for the longitudinals.

Although the high-strength steel-wire and wire-rope used for this section of mattress appear to possess the advantage of costing less than the Bessemer-steel cables, when the strength is considered, they have the disadvantage of being difficult to handle, on account of a tendency to spring and uncoil unless kept under tension, and on account of breaking when given a sharp bend, and I feel convinced from this trial that the Bessemer-steel cable used on the rest of the work is better adapted to the purpose.

In the remainder of the work at Kaw Bend, and all the work at Quindaro, $\frac{3}{4}$ " Bessemer-steel wire-rope, made of 19 strands No. 11 wire B. G., or $\frac{3}{4}$ " Bessemer-steel wire-rope, made of 19 strands No. 8 wire B. G., was used, instead of the $\frac{3}{4}$ " cast-steel wire-rope, and $\frac{3}{4}$ " Bessemer-steel wire-rope of 7 strands No. 11 wire B. G., instead of the No. 6 cast-steel wire, and the longitudinals were placed at intervals varying from 8' to 12' instead of 10', this latter change being made because the peculiar construction of the mattress-boats prevented the reels carrying the cables from being placed at exact intervals of 10'.

The lower end of the section of mattress referred to above was connected with a mattress with an average total width of 110' and a width under water of about 75', extending down-stream a distance of about 6,400', and connecting with the work done in 1882 and 1883.

This section of mattress, as well as all the mattress in Quindaro Bend, was constructed from the large mattress-boats built for the Commission. They had been designed with a view to weaving mattress into a wire-net, which it had been intended should be made on the boat by a machine, to be placed under the brush-platform, just ahead of the back gunwale. After making some slight alterations, consisting in placing frames to hold wire-cable reels and in making extensions to some of the ways to enable the mattress to be launched into the water without severe strain, these boats were found to answer the purpose of constructing mattress with the system of wire-cables satisfactorily. A drawing showing the details of these boats, with the alterations referred to, is submitted with this report.

The weaving of mattress at Kaw Bend was completed early in October, 1885, when the mat-gangs were transferred to the Quindaro work.

On account of the failure of Messrs. T. M. Hackett & Son to furnish rock as ordered, very large areas of mattress sometimes remained unsunk for a week at a time at the works both at Kaw Bend and at Quindaro Bend. Fortunately, however,

it did not suffer any serious injury, although exposed to the risk of being rolled up by the current or torn apart in storms.

The Kaw Bend revetment was not completed by covering the bank above low water with rock until January 2, 1886.

The bank mattress at Kaw Bend was usually thicker than prescribed by the specifications owing to the brush used being very coarse.

The total area of mattress woven at Kaw Bend during the season amounted to 826,646 square feet. The average quantity of brush used per 100 square feet was about .75 cord, and the total quantity of brush used 6,261.81 cords.

The total quantity of rock used on this work was 14,325 cubic yards, of which 3,745 cubic yards, or an average of about $\frac{1}{4}$ cubic yard per linear foot, was used for sinking mattress. There were 91,210 square feet of the mattress constructed during the spring, and 349,628 square feet of the mattress constructed during the summer, or a total of 440,838 square feet of upper-bank mattress covered with rock, which required 10,580 cubic yards of rock, or an average of 2.4 cubic yards per 100 square feet, or about 1.1 cubic yards per linear foot of upper-bank mattress constructed during the summer. The quantity of rock handled per man per ten hours in rocking upper-bank mattress averaged about 5 cubic yards.

The following statement gives the details and total cost of the work at Kaw Bend:

Statement of quantities and cost of material, cost of labor, &c., for revetment at Kaw Bend.

23,421 cubic yards grading.....	\$1,526 26
6,261.81 cords brush.....	9,790 67
14,325.05 cubic yards rock, delivered at work.....	11,243 05
Cost of labor weaving mat, setting deadmen, &c.....	7,389 37
Cost of labor rocking bank and sinking mat.....	5,968 63
Washing mud from upper bank mat at Kaw Bend.....	300 33
800 pounds of $\frac{3}{8}$ " cast-steel cable, at 18 cents.....	144 00
2,732 pounds No. 6 cast-steel wire, at $12\frac{3}{4}$ cents.....	348 33
26,600 pounds $\frac{3}{8}$ " Bessemer steel cable, at 4.8 cents.....	1,276 80
2,264 pounds $\frac{5}{8}$ " Bessemer steel cable, at 4.425 cents.....	100 18
16,851 pounds $\frac{3}{4}$ " Bessemer steel cable, at 4.8 cents.....	808 85
Repairs to work constructed in spring.....	202 53
Total.....	39,099 00
Add for administration, services of steamer Melusina, and miscellaneous expenses.....	3,481 73
Add proportion of cost of tow-boat service.....	8,104 58
Total cost of work done at Kaw Bend.....	50,685 31
Deduct—	
Repairs to work constructed in spring.....	\$241 08
Washing mud from upper-bank mat.....	300 33
Cost of rocking bank mat constructed in spring.....	3,038 78
	3,580 19
Cost of 7,694 $\frac{1}{2}$ linear feet of revetment constructed.....	47,105 12
or \$6.12 $\frac{2}{5}$ per linear foot.	

In the foregoing statement of cost, as well as in that hereafter given for the Quindaro revetment, "labor" includes the cost of subsisting labor.

The item of "washing mud from upper-bank mat" was the cost of washing the deposit left by the June rise on the mat constructed in Upper Kaw Bend during the spring of 1885, which had to be removed before laying the rock covering. This work was done by one of the graders, and occupied about three weeks. The effectiveness of the protection given the bank by the mattress was fairly tested in this work, as the jet from the grader had little effect in removing any deposit below the upper surface of the mat.

Work was begun by one construction party on the Quindaro revetment on September 7, 1885. Mattress weaving was commenced on September 9 by one gang. Two other parties were put to work in as rapid succession as they could be organized; and on the completion of the Kaw Bend mattress, early in October, two additional parties were transferred from that work, making a total of five mattress parties in service. At this time there were employed in all departments of the work 822 men, which was the maximum number employed at any one time.

At the head of Quindaro Bend the rock underlying the bluffs is exposed, and this point therefore appeared to be a favorable one for starting the work of revetment. It was intended to commence the latter at the down-stream end of the rock ledge, but after grading several hundred feet a bank slide occurred, and as the indications were that any revetment placed within a distance of 1,000' down-stream below the

ledge would be endangered by similar occurrences, it was decided to begin the revetment in a branch about 1,200' below the point originally selected. The mouth of this branch was widened by the use of graders, and the work begun by revetting the lower bank and the bed of the creek.

The total length of mattress woven was 9,760', in five sections. The different contiguous sections overlapped each other in the usual manner. The average total width of mattress was about 135' and the average width of mattress under water about 75'. The details of construction were the same as in the lower portion of the Upper Kaw Bend work, constructed during the summer, Bessemer steel wire cables being used for the strengthening system, the transverse members of which were anchored by being attached to fragments of rock weighing from 150 to 200 pounds, buried from 3' to 5' in the ground on top of the bank, the outer or stream ends being attached to the stream cable by bending the transverse cables and fastening them with a wrought-iron stirrup-bolt, which in the case of the intermediates was made of $\frac{3}{4}$ " iron, and in that of the principals of $\frac{5}{8}$ " iron, the intersecting transversals and longitudinals being fastened together by hard-wood toggles at every intersection. All cables used in mattress constructed in 1885 were annealed and galvanized.

The height of bank was about 15', which was graded to a slope of $2\frac{3}{4}$ on 1 for the straight portions and about 3 on 1 for protecting points.

The same difficulty of getting a sufficient quantity of rock for sinking mattress, as occurred at Kaw Bend, was experienced on the Quindaro work, as much as 1,600 linear feet of mat being afloat in one section at a time. Too much stress cannot be laid on the necessity of leaving not more than 200' of mattress afloat at one time, as there is great danger, when large areas are afloat, of the middle of the mat bagging and the stream edge curling under.

When mattress weaving began at Kaw Bend in August there were only about ten mattress weavers available, so that about 120 men had to be trained to learn this class of labor during the season, for the different parties, and on account of having to recruit new parties as put in the field, from the older ones, the efficiency of each party was less than would have been the case if this had not been necessary. The mattress parties had hardly attained a full degree of efficiency when work had to be discontinued.

During the early part of the work one mattress party would construct about 12,150 square feet per day; towards the close of the work about 20,700 square feet.

There was 1,315,000 square feet of mattress woven at Quindaro, for which there was used a total of 7,982 cords of brush, or an average of about .6 cord of brush for 100 square feet of mattress. This is about 20 per cent. less than the quantity used for the same area at Kaw Bend for the reason that the bank mattress at Quindaro, the brush used being of smaller diameter and finer quality, could be woven much thinner than that at Kaw Bend where the upper-bank mattress was made usually nearly as thick as the low-water mattress and also considerable brush had to be used in filling up the toe of the bank where sloughing had taken place, or in weaving a narrow fringe at the toe to prevent sloughing.

On account of not being able to get from the contractors rock as required, the area of the upper-bank mat that had been covered with rock by October 27, 1885, the time when the weaving of mattress was completed, was small. Afterwards arrangements were made for obtaining rock from other sources, and this material was received on barges until December 10, 1885, after which, on account of the river freezing over, it was delivered by teams on the work until January 31, 1886, by which time all the upper-bank mat was covered with the exception of about 41,500 square feet at the lower end of the revetment. This was covered during April, 1886, the rock for this purpose being received on barges.

The total area of upper-bank mattress covered with rock amounted to 521,600 square feet, which required about 15,650 cubic yards of rock, or an average of 3.1 cubic yards per 100 square feet.

The following statement shows the total cost of the work at Quindaro, Kans., viz:

Statement of quantities and cost of material, cost of labor, &c., for revetment at Quindaro, Kans.

52,000 cubic yards grading.....	\$2,315 51
7,661 cords brush.....	12,117 26
20,126 cubic yards rock, delivered at work.....	16,543 57
Cost of labor, weaving mat, setting deadmen, &c.....	10,046 77
Cost of labor, rocking bank, and sinking mat.....	5,540 62
36,800 pounds $\frac{3}{4}$ " Bessemer steel wire rope, at 4.8 cents.....	1,766 40
14,440 pounds $\frac{5}{8}$ " Bessemer steel wire rope, at 4.425 cents.....	638 97
13,616 pounds $\frac{3}{4}$ " Bessemer steel wire rope, at 4.8 cents.....	653 57
	49,622 67

Add for administration, services of steamer Melusina, and miscellaneous expenses	\$2,548 51
	52,171 18
Add proportion of cost of tow-boat service	9,929 97
Cost of 9,706 linear feet of revetment constructed	62,101 15
or \$6.398 per linear foot.	

SURVEYS AND CHANGES IN THE RIVER.

In the fall of 1885 a survey of the reach extending from a short distance below Pomeroy, Kans., to Randolph Bluffs, Mo., was made for the purpose of ascertaining what changes had taken place in shore-lines, channel, &c. A map embodying the results of this survey was forwarded to your office on November 30, 1885. This survey was afterwards extended to Liberty Landing, Mo.

Another survey of the reach from Pomeroy, Kans., to Randolph Bluffs, Mo., was made last spring, to show principally the changes that had taken place in the river between the Kansas City Bridge and the mouth of the Kansas River, and also those that had taken place in the unprotected bends of the rest of the reach, a map of which survey and also one of the reach between Randolph Bluffs and Liberty Landing, Mo., accompany this report.

From these surveys it was ascertained that the important changes in the river between Pomeroy, Kans., and Liberty Landing, Mo., are as follows, viz;

In the bend a short distance below Pomeroy, Kans., the bank was eroded to the extent of 5,020', with an average width of 72', amounting to about $8\frac{1}{2}$ acres. This change is of comparatively little importance.

In Parkville Bend the bank was eroded to the extent of 5,335', with an average width of 26', amounting to about 3 acres, this change also being of little importance.

The changes in Quindaro Bend were too slight to be appreciable, the construction of revetment in the fall of 1885 having put a stop to all cutting.

The erosion in the bank of Upper Kaw Bend was between the lower end of the work constructed in the spring of 1885, and the point at which afterwards the work of 1885 was connected with the revetment of 1882. The extent of this erosion was 5,205', with an average width of 322', amounting to about $38\frac{1}{2}$ acres. This erosion took place in July and August, 1885, and its further progress was stopped by the construction of the revetment.

In the extreme lower part of Kaw Bend an erosion took place for a distance upstream from the point immediately opposite the mouth of the Kansas River of 5,423', with an average width of 38', amounting to about $4\frac{3}{4}$ acres. This erosion was caused by the changes in the channel produced by the erosion in Upper Kaw Bend.

The most important change in the whole reach was that which took place in the vicinity of "Pest Island," just west of the Kansas City bridge, and which was caused in the following manner, viz: The ice in the river below the Kansas City Bridge and up to the lower end of Pest Island went out on February 14. The ice above the mouth of the Kansas River went out on February 20, forcing its way through the high-water chute between Pest Island and the north bank of the river and forming a high ice gorge between the mouth of the Kansas River and the upper end of Pest Island, the ice in the main channel between Pest Island and the south bank of the river remaining in position and forcing the large volume of water which followed the breaking up of the ice gorges above, to take its course through the chute, which thereby was widened and deepened, causing a severe erosion of the northwest bank of the island. The ice in the main channel between Pest Island and the south bank of the river went out February 23.

During the spring and June rises a large volume of water passed through the chute, which seems to be gradually enlarging by the erosion of the north bank of the river, and it is probable that this bank will have to be protected in the near future. One of the effects of this change was to cause a shoaling along the bank in front of Harlem, Mo.

The changes in the bank at Harlem, Mo., were too small to be appreciable, the cutting of the bank being prevented in the summer and fall, 1885, by a portion of the fleet lying at this bank, and in the spring, 1886, by the shoaling referred to above.

In the "East Bottoms" below Kansas City, Mo., the bank was eroded to the extent of 7,540', with an average width of 59', amounting to about 10 acres.

In the reach between Randolph Bluffs, Missouri, and Liberty Landing, Missouri, a

distance of about 12 miles, the erosion for the past seven years has been quite severe, and was as follows, viz :

Years.	In Sharp's Bend.		Right bank, immediately above Big Blue River.		Left bank, opposite Big Blue Bend.		In Wayne City Bend.	
	Extent of erosion.	Amount of erosion.	Extent of erosion.	Amount of erosion.	Extent of erosion.	Amount of erosion.	Extent of erosion.	Amount of erosion.
	<i>Feet.</i>	<i>Acres</i>	<i>Feet.</i>	<i>Acres</i>	<i>Feet.</i>	<i>Acres</i>	<i>Feet.</i>	<i>Acres</i>
From 1878 to 1882	12,400 × 617	176	5,300 × 240	29	None .....	.....	16,200 × 771	286.8
From 1882 to 1885	11,100 × 684	174	7,900 × 606	110	4,500 × 537	55	15,100 × 338	117.1
Total .....	.....	350	.....	139	.....	55	.....	403.9

This makes a grand total of about 950 acres for a period of seven years, or an average of $11\frac{1}{2}$ acres per mile of river per year, which, as the banks were on an average about 15' high, and the depth of scour on an average was about 20', is equivalent to 637,000 cubic yards of earth eroded per mile of river per year.

During the month of May, 1886, an accurate survey of the Kansas City and Leavenworth bridges was made and a report thereon forwarded to your office.

CARE OF PLANT AND WINTERING BOATS.

During the season of active operations considerable repairs were required on the extensive plant belonging to the work. These consisted principally in calking hulls and repairs to machinery of graders and steamboats. In the latter work the machine-boat, with machine and blacksmith shops, proved almost invaluable.

During the month of October, 1885, preparations were begun for constructing ways and tracks to be used in wintering the boats that were to remain in this vicinity.

As the river in front of the ways and tracks used in pulling boats out of the river during the winter of 1884 to 1885 had shoaled up, it became necessary to select another locality suitable for this purpose, which was found about $1\frac{1}{2}$ miles below the head of the work in Quindaro Bend. The construction of a set of ways and tracks was begun on October 20, 1885. The system of construction was similar to that of the Kaw Bend ways. The inclined ways, 11 in number, were constructed on a slope of 1 on 5 and placed 10' between centers, 10 being tied together in pairs. The details of the tilting frames, main track, cross track, and sliding frame are shown on the accompanying drawing, the side track being similar in construction to that in the Kaw Bend ways, which was described in my report for the year ending June 30, 1885.

The tracks extended back from the river a distance of about 1,000'.

In the construction of ways and tracks, 3,650 posts and piles were driven and sawed off, and 18,000 linear feet of timber tracks framed and laid. The tracks and ways covered an area of about $7\frac{1}{4}$ acres. This work was completed on December 12, 1885, although it was sufficiently advanced by November 26 to permit the pulling out of boats, which was completed on January 2, 1886.

The boats laid up on the ways were: 6 mattress-boats, estimated weight 125 tons each; 4 construction quarter-boats, estimated weight 110 tons each; 37 100'-barges, estimated weight 65 tons each; 18 64'-barges, estimated weight 25 tons each; iron steamer Melusina, estimated weight 55 tons; 9 barges, quarter-boats, &c., of lighter weights.

In pulling out the mattress-boats and large quarter-boats the tackle used consisted in two sets of double and triple blocks, rove with 7" lines, attached to the ends of the hulls, and three sets of double and triple blocks with 6" lines at intermediate points.

For pulling out the 100' barges and the steamer Melusina four 6" lines with double and single blocks, and for the 64' barges and other lighter boats two 6" lines with double blocks were used.

To attach the tackle to the heavier boats there were used slings made of $\frac{3}{4}$ " Bessemer steel wire rope, having eyes at each end, which were brought together after the slings had been passed around the boats, and to which the tackle blocks were fastened by means of shackles. These slings were passed entirely around the hulls of the mattress-boats, large barges, and steamer Melusina, while in the case of the large quarter-boats they were passed under the bottom and through the windows in the hull. Five slings were used for the mattress-boats and large quarter-boats and four for the 100' barges and the steamer Melusina. The slings for the lighter boats were made of 6" rope.

The shore ends of the pulling tackle were attached to double bents of braced piles,

situated behind the cross-track, as shown on the drawing, the pulling lines being led through snatch-blocks to the horse capstans, which were made of oak, with 8" drums and 10' levers. A team of strong mules was attached to each capstan.

For pulling boats on cross-track frame to side track a tackle with double and triple blocks, with each end of the line led to a capstan to double speed, was employed. In pulling boats back on main and side tracks double-block tackles, carried to capstans, were employed, four in the case of the mattress-boats, three in that of the large quarter-boats, and two in that of the barges.

The work of pulling out the boats was carried on under great difficulties, owing to the severely cold weather and the river freezing over before the work was half completed. On December 13 the river closed with thirty-seven boats, including most of the largest pieces, still in the water. After this date nearly all the boats had to be broken out of the ice. The ice in the river broke on the night of December 21, and carried with it three of the mattress-boats for a distance of from $\frac{1}{2}$ to 1 mile before they could be recovered. The river gradually closed again soon afterward, leaving, however, a pool at the foot of the ways, which was kept open by the steamer *Melusina*. The difficulties of proceeding were now increased by the slush ice left at the foot of the ways as each boat was dropped into position and pulled out. At this stage of the work the *Melusina* rendered very valuable service by keeping an open space outside of the boats and in getting rid of slush ice from around the ways by working her wheels and paddling the slush ice under the heavy ice. Without this aid the work could probably not have been carried on.

The most effective work done in one day consisted in pulling out five 100' barges on one occasion and three mattress-boats on another.

Considerable time was required to overhaul lines after pulling a boat to the top of the ways. This was done by hitching four mules, with small double tackle, to the heavy tackle.

Although efforts were made to keep the lines dry by running them over plank laid on the ground, they suffered a great deal from mud and snow in moving boats back on the main and side tracks.

The total cost of the ways was \$6,728.49, and that of pulling out the boats \$4,439.21. The latter cost would have been much less had it not been for winter setting in so early.

The method employed for pulling out boats worked very satisfactorily, but if it were feasible to establish a permanent station where the fleet could be laid up on tracks for several successive years the average cost per annum of doing this work could be very much reduced, and a great deal of time saved by using cradles instead of slings and tilting frames, steam instead of horse power, and geared shafting, with chains, instead of block and tackle.

Since the completion of the work of laying up the boats a force of six or seven watchmen has been employed to care for the fleet and other plant at Quindaro, Kans., and Kaw Bend, Missouri, a force of this size being rendered necessary to insure the safety of the fleet, especially against fire, the only protection available for this purpose consisting in hand grenades.

In April, 1886, a small force was employed in making some slight repairs to, and launching, the steamer *Melusina*, and in repairing, caulking, and launching a few barges to be used in transporting rock for completing the Quindaro revetment.

On May 11, 1886, this vicinity was visited by a violent storm of rain and wind, but the fleet escaped with but slight damages to the roofs of quarter-boats.

TELEPHONE LINES.

During the summer of 1885 telephone lines connecting the different works with each other and with the office at Kansas City, Mo., were erected at a cost of \$320.53. These lines proved of great value in transacting business and sending orders to tow-boat captains.

In conducting field work I have been assisted by Assistant R. H. Bacot, who, in addition to his duties in connection with construction work, had charge of plant repairs, including the construction of ways and tracks at Quindaro, and the pulling out of boats; Assistant A. H. Weber, in charge of surveys and, during the period when construction was carried on, of a construction party; Assistants D. W. Kinnaird and W. L. Seddon, in charge of construction parties.

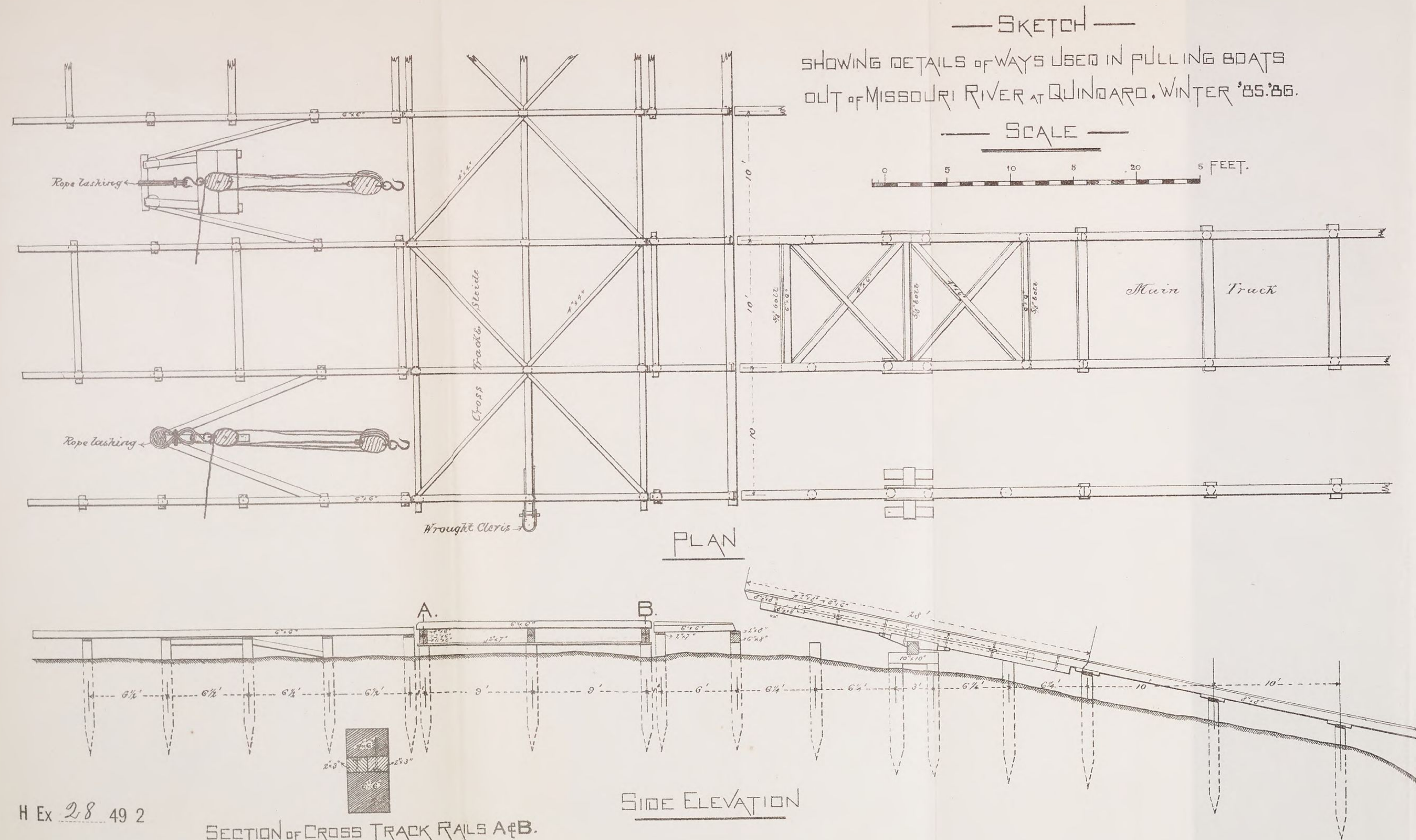
In the office I was assisted by Mr. Ed. F. Hermanns, in charge of accounts, pay-rolls, &c.

All these gentlemen performed their duties in a creditable manner.

Very respectfully, your obedient servant,

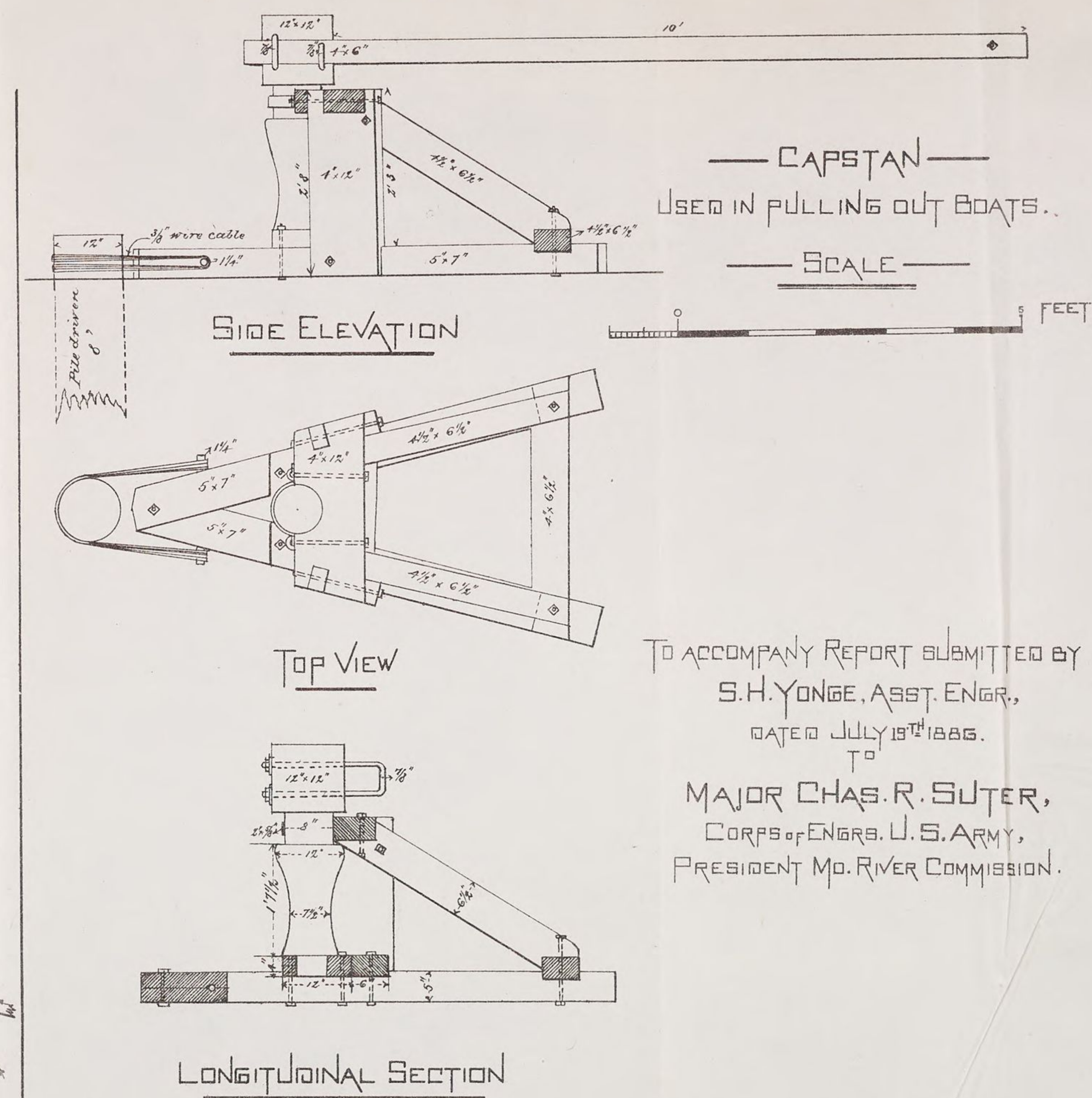
SAM'L H. YONGE,
Assistant Engineer in Charge.

Maj. CHAS. R. SUTER,
Corps of Engineers, U. S. Army,
President Missouri River Commission, Saint Louis, Mo.



H Ex 28 49 2

SECTION OF CROSS TRACK RAILS A & B.



TO ACCOMPANY REPORT SUBMITTED BY
S.H. YONGE, ASST. ENGR.,
DATED JULY 18TH 1886.

TO
MAJOR CHAS. R. SUTER,
CORPS OF ENGRS. U.S. ARMY,
PRESIDENT MO. RIVER COMMISSION.

MAP
OF
MISSOURI RIVER
FROM
PARKVILLE TO RANDOLPH BLUFFS,

SHOWING CHANGES IN SHORE LINES FROM FALL 1885 TO SPRING 1886.

SURVEY OF 1885 BY SAM'L. H. YONGE, ASST. ENGR.,
1886 " " " " " "

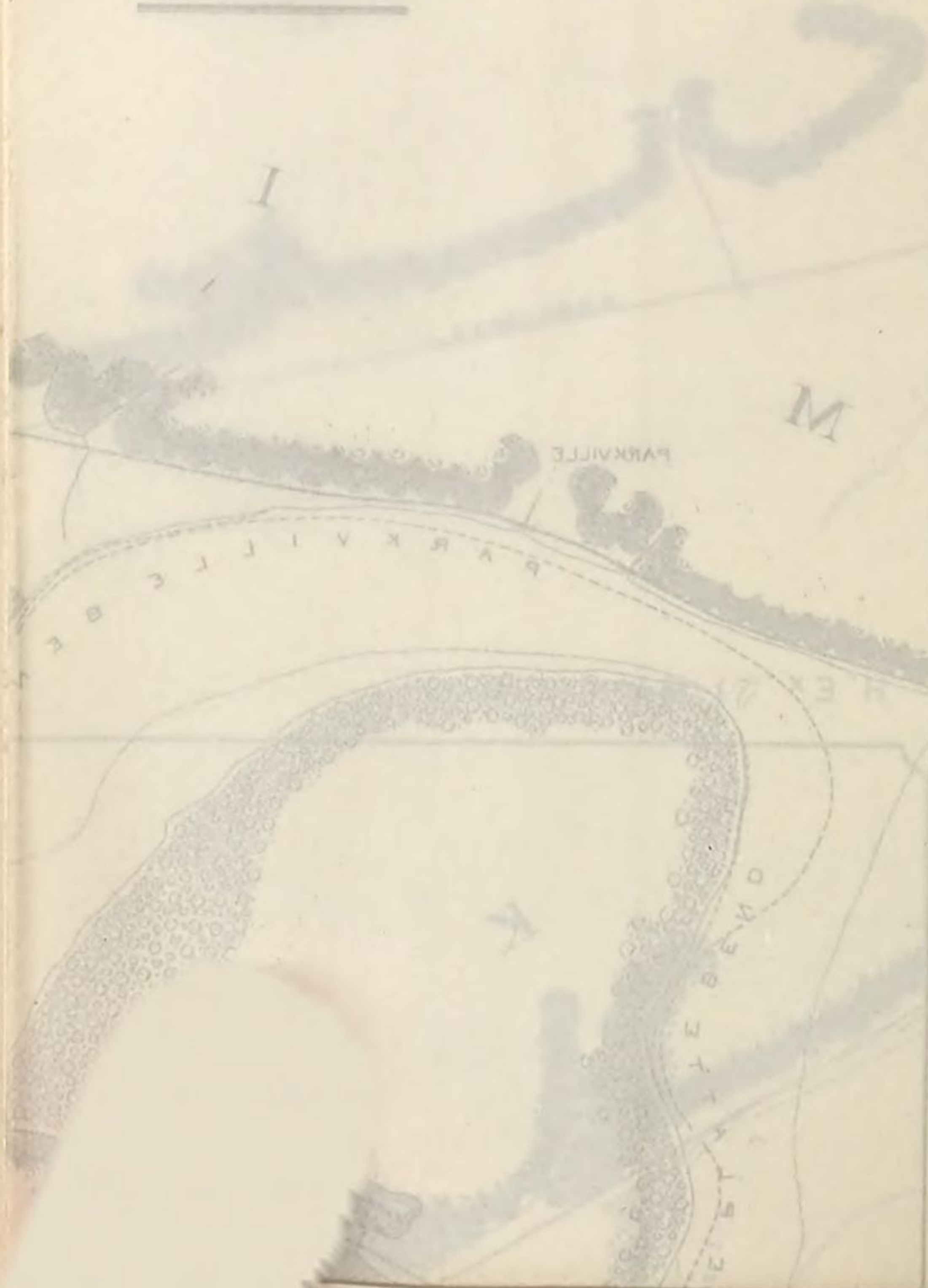
BLUFFS AND INTERIOR TOPOGRAPHY TAKEN
FROM SURVEYS OF 1878 AND 1882.

SCALE 0 500 1000 2000 3000 4000 5000 FEET.



— TO ACCOMPANY REPORT SUBMITTED BY
S. H. YONGE, ASST. ENGR.,
DATED JULY 16TH 1886
TO
MAJOR CHAS. R. SUTER,
CORPS OF ENGRS U.S. ARMY,
PRESIDENT MO. RIVER COMMISSION,

MAP
 OF
 MISSOURI RIVER
 FROM
 PARKVILLE TO RANDOLPH BLVD
 SHOWING CHANGES IN SHORE LINES FROM FALL 1882 TO SPR
 SURVEY OF 1885 BY SAM'L H. YONGE, ASST. ENGR.
 1886
 BLUFFS AND INTERIOR TOPOGRAPHY TAKEN
 FROM SURVEYS OF 1878 AND 1882.
 SCALE 1:50,000
 U.S. GEOLOGICAL SURVEY



MAP
OF
MISSOURI RIVER
FROM
KANSAS CITY TO LIBERTY LANDING,

SHOWING CHANGES IN SHORE LINES FROM 1878 TO 1885.

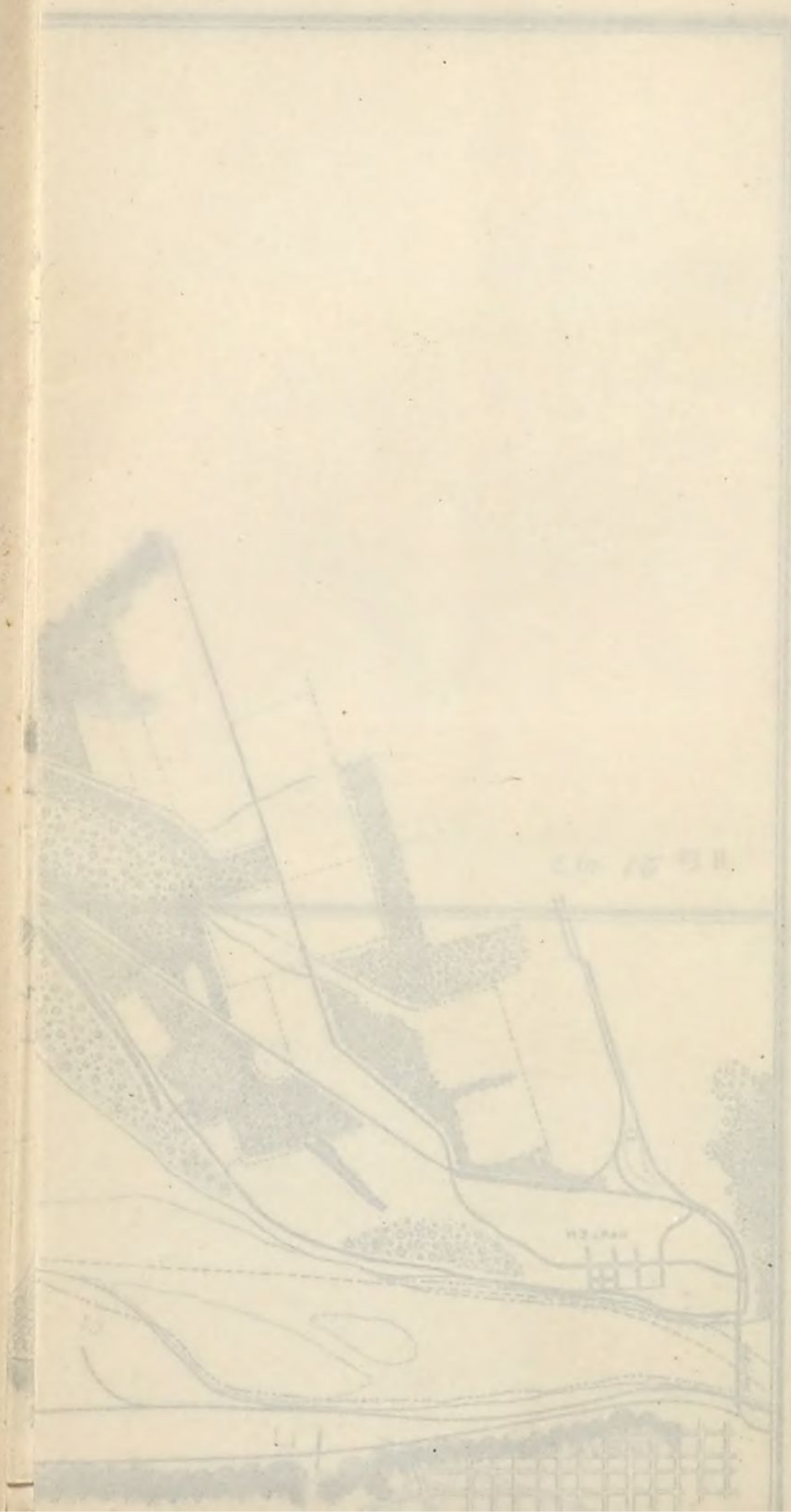
SURVEY OF 1878 BY D.W. WELLMAN, ASST. ENGR.
" 1882 " J.W. NIER, " "
" 1885 " SAML.H. YONGE, " "

BLUFFS AND INTERIOR TOPOGRAPHY TAKEN
FROM SURVEYS OF 1878 AND 1882.

SCALE 0 100 200 300 400 500 FEET.



TO ACCOMPANY REPORT SUBMITTED BY
S.H. YONGE, ASST. ENGR.,
DATED JULY 18TH 1886
TO
MAJOR CHAS. R. SUTER,
CORPS OF ENGRS U.S. ARMY,
PRESIDENT MO RIVER COMMISSION.



KANSAS INDIANS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, an amendment to the estimate for fulfilling treaties with the Kansas Indians for 1888, (Book of Estimates, page 137).

DECEMBER 11, 1886.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT, *December 10, 1886.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior, of the 7th instant, and inclosures, submitting an amendment to the estimate on page 137 of the Book of Estimates for 1888 for fulfilling treaties with the Kansas Indians.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 7, 1886.

SIR: I have the honor to inclose herewith, for transmittal to Congress, under the provisions of section 2 of the act of July 7, 1884 (23 Stat., 254), copy of a letter of 4th instant from the Commissioner of Indian Affairs, with accompanying papers, submitting a proposed amendment to estimate of appropriations required for the Indian service for the fiscal year ending June 30, 1888, under the title "Fulfilling treaty with Kansas," therein noted, as follows:

In lieu of item \$10,000, estimated for under the above title, insert "For interest in lieu of investment on \$200,000, $\frac{203}{1332}$ of \$10,000, being the pro rata amount due the Kansas tribe of Indians, per second article of treaty of January 14, 1846, \$1,524.02"

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, December 4, 1886.

SIR: I have the honor to invite your attention to the provisions of the treaty with the Kansas tribe of Indians, proclaimed April 15, 1846 (9 Stats., p. 842).

Under the first article of said treaty the Kansas tribe of Indians "cede to the United States 2,000,000 of acres of land on the east part of their country, embracing the entire width, 30 miles, and running west for quantity."

Article 2 provides that—

In consideration of the foregoing cession, the United States agree to pay to the Kansas Indians \$202,000, \$200,000 of which shall be funded at 5 per cent., the interest of which to be paid annually for thirty years, and thereafter to be *diminished and paid pro rata should their numbers decrease*, but not otherwise; that is, the Government of the United States shall pay them the full interest for thirty years on the amount funded, and at the end of that time should the Kansas tribe be less than at the first payment they are only to receive pro rata the sums paid them at the first annuity payment.

One thousand dollars of the interest thus accruing shall be applied annually to the purposes of education in their own country, and \$1,000 annually for agricultural assistance, implements, &c.

From the year 1847, up to and including the year 1886, the sum of \$10,000 has been annually appropriated by Congress for the said tribe under the stipulations contained in the above-mentioned treaty, but owing to a late census report from the United States Indian agent in charge of said tribe of Indians, indicating that the tribe now numbers only 203 souls, it is shown that the tribe has suffered a loss in numbers of 84 $\frac{3}{4}$ per cent. since the date of first payment by ex-Superintendent Thomas H. Harvey to 1,332 Indians.

I deem it my duty to lay this matter before you, with the recommendation that the attention of Congress be called to this matter in order that the estimate of \$10,000 for said Indians may be reduced, in compliance with the requirements of the second article of this treaty.

With this end in view I have calculated the amount that is now due the Kansas tribe, based upon a letter received from the Second Auditor of the Treasury (copy herewith), showing the first semi-annual payment of \$4,000 was made by ex-Superintendent Murphy to 1,332 Indians, and that the present number is 203, and find that there is due the tribe for the next fiscal year the sum of \$1,524.02.

I submit herewith a copy of a proposed amendment to the estimates now before the House Committee on Indian Affairs, for the action of said committee.

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

TREASURY DEPARTMENT,
SECOND AUDITOR'S OFFICE,
Washington, D. C., September 23, 1886.

SIR: In reply to your inquiry of September 21, 1886, as to the number of Kansas Indians carried on the roll of Thomas H. Harvey, superintendent of Indian Affairs, on which he made the first payment of annuity due under the second article of treaty of January 14, 1846, I have the honor to state that the voucher in question (filed in settlement

7337, box 299, dated September 25, 1848), shows 1,332 individuals paid, as entitled to \$3 per capita, \$4 surplus being paid to the chiefs.

Very respectfully,

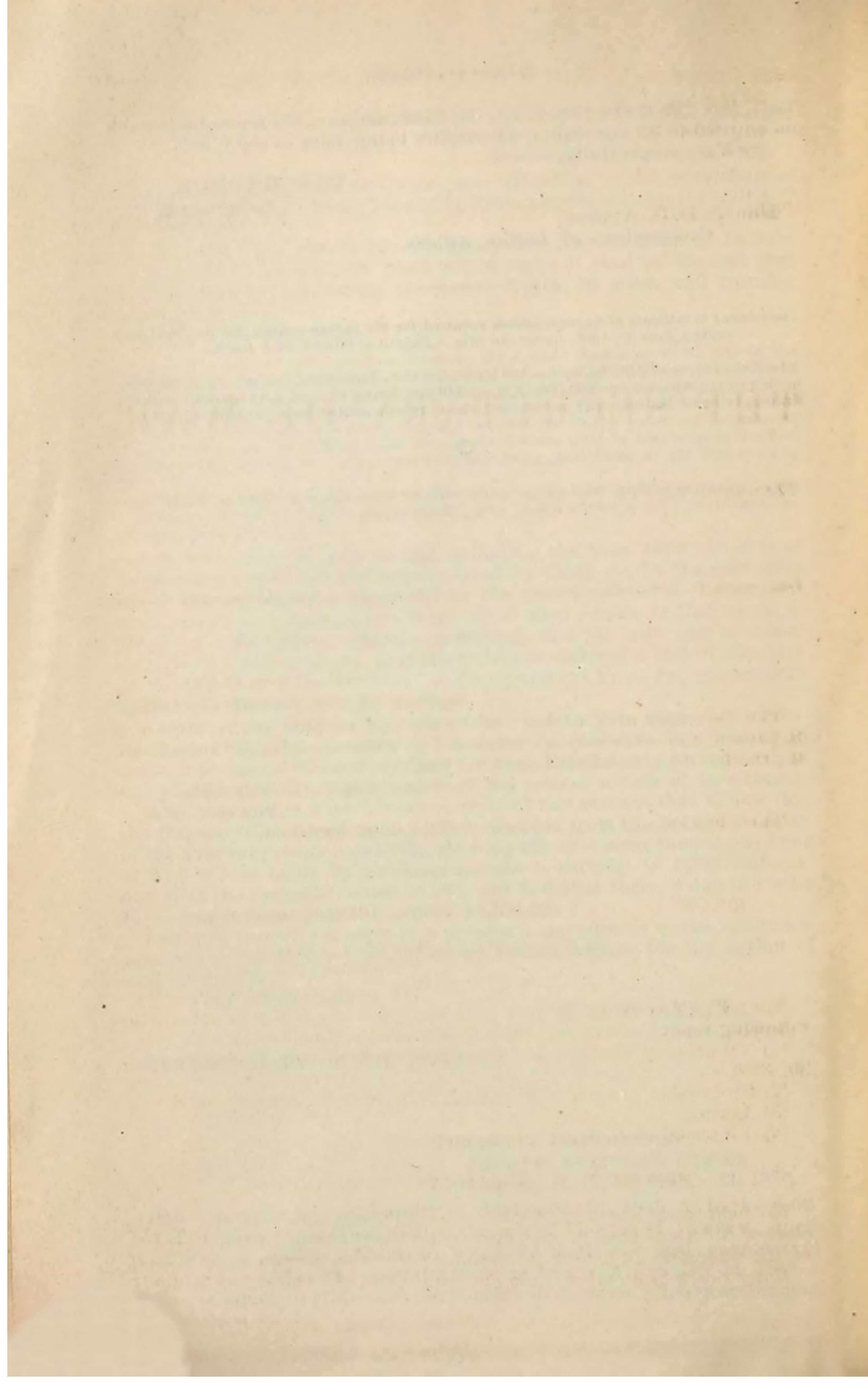
W. C. HARMON,
Acting Auditor.

Hon. J. D. C. ATKINS,
Commissioner of Indian Affairs.

Amendment to estimate of appropriations required for the Indian service, for the fiscal year ending June 30, 1888, under the title "Fulfilling treaties with Kansas."

In lieu of item of \$10,000, estimated for under the above title, insert: "For interest, in lieu of investment on \$200,000, $\frac{203}{1332}$ of \$10,000, being the pro rata amount due the Kansas tribe of Indians, per second article of treaty of January 14, 1846, \$1,524.02."

○



THE MISSISSIPPI RIVER COMMISSION ANNUAL REPORT.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

The annual report of the Mississippi River Commission for the fiscal year ending June 30, 1886.

DECEMBER 11, 1886.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 8, 1886.

The Secretary of War has the honor to transmit to the House of Representatives the annual report of the Mississippi River Commission for the fiscal year ending June 30, 1886.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

REPORT OF THE MISSISSIPPI RIVER COMMISSION FOR 1886.

THE MISSISSIPPI RIVER COMMISSION,
PRESIDENT'S OFFICE,
New York, September 20, 1886.

SIR: The Mississippi River Commission has the honor to submit the following report, embracing the subjects specified below, to wit:

- (1) Progress of surveys and examinations from July 1, 1885, to June 30, 1886.
- (2) Progress of construction from July 1, 1885, to June 30, 1886.
- (3) Levees.
- (4) Financial statements and estimates.

PROGRESS OF SURVEYS AND EXAMINATIONS.

No field work has been done. A small force was retained till the close of the fiscal year, in the office, under the direction of the Secretary of the Commission, for the reduction of the work of previous seasons.

Gauges.—In September, 1885, for want of funds, the gauge readings

at Grand Eddy, Mo.; Paducah, Ky.; Belmont, Mo.; Greenville, Miss., and College Point, La., were discontinued. There remain eighteen stations at which gauges are maintained.

Discharge observations.—The reduction of the notes of the six discharge parties which were in the field from September, 1884, to April, 1885, has been continued and will soon be completed.

Preparation of maps.—Work on the charts of the 1 : 10,000 series, 233 in number, is approaching completion; and the 1 : 20,000 series, reduced from the preceding, is in process of publication. The inch-to-the-mile series has been published complete, but some of the sheets require additions from later surveys. The map of the Alluvial Valley, on a scale of 1 inch to 5 miles, is finished, and ready for printing when funds are available.

(For details see report of Captain Turtle, Appendix A.)

PROGRESS OF CONSTRUCTION.

In the absence of appropriations no work has been done in the districts below Cairo, beyond what was necessary for care and preservation of property, except such moderate repairs of existing works as could be made with the balances available for contingencies.

The general service purchased and delivered stone for repairs of revetment at Hopefield Bend, in November and December, 1885, and part of its plant is now employed in the work for the protection of the Memphis City front.

(For details see the report of Captain Turtle, Appendix B.)

The present value of the construction plant owned by the Government, and employed on the Mississippi River from Des Moines Rapids to the Head of the Passes, is, approximately, \$1,061,000, of which \$1,014,000 is in floating plant, and \$47,000 in instruments, office furniture, tools, &c. Detailed statements of this plant and of its value are given in the reports of the several officers. Two tow-boats belonging to the third district have been lent to the Missouri River Commission during the suspension of operations.

The diminution in value since the last report, amounting to about \$200,000, in part represents the deterioration during a long period of disuse. In the Illinois-Ohio River district, in February, 1886, a loss of \$40,000 was occasioned by floating ice. On the other hand, a constant expenditure has been required to secure the idle plant from decay and total loss.

In November, 1885, a tour of inspection from Keokuk to New Orleans was made by the Commission, and a supplemental report, containing the information then obtained as to the condition of the works and their effect, was submitted December 18, 1885.

(See Ex. Doc. No. 38, H. of R., 49th Congress, 1st session.)

WORKS ABOVE CAIRO.

(District from Des Moines Rapids to Illinois River, 161 miles. Officer in charge, Capt. E. H. Ruffner, Corps of Engineers.)

The general plan in this district contemplates closing sides channels by low dams, revetting banks subject to erosion, and regularizing the channel with the view of providing a navigable depth of 5 feet at low water. Dredging is employed to aid the action of the dams or to remove temporary obstructions, the material excavated being used for foundations of brush dams when suitable.

The operations of the past year comprise repairs to closing dams at Denmark, Carroll, Hickory, and Slim islands, construction of dams at Westport Chute and the Fritz islands, completing revetment at Cincinnati Landing, and dredging in Quincy Bay, Hickory Chute, and on Wyaconda Bar, with minor repairs and work of shore protection.

Navigation during the year has been generally good, but little detention from shoal water being reported.

(For details see report of Captain Ruffner, Appendix C.)

(District from the Illinois River to the Ohio River, 241 miles. Officer in charge, Maj. O. H. Ernst, Corps of Engineers.)

The general plan in this district contemplates a continuous improvement from Saint Louis down, by confining the river to an approximately uniform width of 2,500 feet and protecting the banks from erosion. The object is to secure a minimum low-water depth of 6 feet from the mouth of the Illinois to Saint Louis, and of 8 feet from Saint Louis to the Ohio. The methods employed are to direct the flow, and to build up new banks with solid material caught from the river itself by means of hurdles, and to revet the new banks so formed as well as the natural banks where subject to caving. Work is also done at detached points, when specially authorized, as at Alton and Saint Louis harbors and on the east bank near Cairo.

From lack of funds operations have been confined to such repairs as were necessary to prevent loss, and to additions that seemed advisable in view of the action of existing works. Repairs were made at Horsetail, Twin Hollows, and Chesley Island, and the hurdles at Pulltight and Jim Smith's were raised.

The works in this district suffered little damage during the winter, and are now in good condition. Large deposits have been formed behind them, and a minimum channel depth of 8 feet maintained for 22 miles below Saint Louis. A least depth of $5\frac{1}{2}$ feet is reported in that part of the river which has not been improved.

On February 13, 1886, the fleet of this district was carried from its winter harbor, behind Carroll's Island, 12 miles below Saint Louis, by ice, and several pieces destroyed or damaged beyond repair. The loss including expenses of recovery and repair, was about \$40,000.

(For details see report of Major Ernst, Appendix D.)

WORKS BELOW CAIRO.

The general plan adopted by the Commission for the improvement of the river from the mouth of the Ohio to the mouth of Red River contemplates the reduction of the low-water width to about 3,000 feet, by means of permeable dikes, behind which artificial banks shall be formed by deposit, and the preservation of the natural curves of the river by revetting caving banks, together with the construction of levees as a secondary means of maintaining the regimen of the river. Below Red River, by reason of the depth of water and the comparative stability of the banks, no works of contraction are required.

The rectification of the Red and Atchafalaya Rivers presents a special problem, a solution of which was offered by the Commission in their report of December 19, 1884, the plan presented being, however, subject to modification after further study of the conditions.

Beyond their general plans, works of improvement and protection at certain places have been specially authorized and placed in charge of the Commission.

FIRST DISTRICT.

(Cairo to foot of Island No. 40, 220 miles. Includes New Madrid and Plum Point Reaches. Officer in charge, Capt. Smith S. Leach, Corps of Engineers.)

Since the last report no work has been done in this district beyond what was necessary for the care and preservation of plant, and such slight repairs to the works on Plum Point Reach as their condition seemed to require and the state of the funds permitted. A small break at the upper angle of the Osceola-Bullerton Dike was closed, with the immediate effect of filling up the excavation behind it, which had been caused by the scour of the current through the gap.

The damage to the works during the past year has been slight, and has not materially impaired their efficiency. A considerable amount of pile-dike has been broken off at the 20-foot level from the decay of the material used, but the lower parts, with the foot-mats, remain, and the deposits which have formed behind them are unaffected. The revetment at Fletcher's Field was exposed at both ends by the caving of the unprotected bank above and below it, but has held its place with very little loss.*

The main low-water channel through this reach is becoming well defined, both in position and in depth, while the secondary channels are being obliterated. The channel through Plum Point Crossing has not changed its form during the past season, through all stages of the river.

(For details of the work and tabulated results of surveys see report of Captain Leach, Appendix E.)

SECOND DISTRICT.

(Foot of Island No. 40 to mouth of White River. Includes Memphis Reach and Harbor. Officer in charge, Capt. Smith S. Leach, Corps of Engineers.)

The only works of improvement in this district during the past year have been the repair of a serious fault in the revetment of Hopefield Bend and the reballasting of a part of this revetment, and of that on the Memphis city front. This was completed in January, 1886, since which time no change has taken place in the condition of the work at either place. The amount expended was about \$20,000.

The effect of maintaining the bank in Hopefield Bend has been to cause the river to cut away the bar which was forming on the point below, and to transfer the stress of the current on the left bank to the southern part of the city front. The caving along this tract threatening serious loss, a sum of \$60,000 has been subscribed by citizens and railway companies interested, and, by authority of the Secretary of War, plant has been furnished, to be used under direction of the Engineer officer of the district, in securing this front by a system of crib-spurs, such as have been successfully tried at New Orleans.

(For details see report of Captain Leach, Appendix F.)

THIRD DISTRICT.

(Mouth of White River to Warrenton, Miss., 220 miles. Includes Lake Providence Reach and Vicksburg and Greenville Harbors. Officer in charge, Capt. William T. Rossell, Corps of Engineers.)

(1) *Lake Providence Reach.*—The only work of improvement during the past year has been the closing of gaps in the Baleshed and Stack

*Recent examination shows that the Craighead Point revetment, which was supposed to have disappeared, is still in place and entire.

Island system of dikes, by repairs and extension of existing works, and construction of one additional cross-dike, the whole amount expended being about \$13,000.

Examination shows in general satisfactory results from the works. Even where the dikes have disappeared, as at Duncansby, they had already accomplished the purpose for which they were built, and the channel secured by them is still maintained. The revetment at Pilcher's Point has, in many places, slipped out of sight, but the bank line has substantially retained its position. The Mayersville revetment has not succeeded in holding the head of the island.

The least channel depth on the reach during the year has been 13 feet.

(2) *Vicksburg Harbor*.—No work has been done here during the year. Examination shows that the cut through the bar, which was dredged in 1883 to the zero of the gauge, has been filled to an average depth of 7.5 feet. The revetment at Delta Point has suffered no material loss, and the shore-line is unchanged.

(For details see report of Captain Rossell, Appendix G.)

FOURTH DISTRICT.

(Warrenton, Miss., to Head of Passes, 484 miles. Includes Harbors of Natchez and Vidalia and New Orleans, mouth of Red River, and rectification of Red and Atchafalaya Rivers. Officer in charge, Maj. Charles W. Raymond, Corps of Engineers.)

The work in this district has been confined to the mouth of Red River, where the channel was kept open during the low-water season of 1885 by scraping and by temporary wing-dams, at a cost of \$11,000.

Examination of the spurs in process of construction in Gouldsboro' Bend, New Orleans Harbor, shows that since they were begun the 100-foot contour has moved outward, and the other contours have become more regular. Their full effect, however, cannot be ascertained until the system is completely developed.

(For details see report of Major Raymond, Appendix H.)

LEVEES.

No new levee work has been done during the year. From February to May, 1886, about \$3,500 was expended in the fourth district in repairs to the sinking portion of Kempe Levee, at Potter's Slough.

Numerous small breaks, due to insufficient height, occurred in the third district levees, between Cypress Creek and Arkansas City, during the flood of 1886. Breaks are also said to have taken place in the Long Lake Levee, second district. Elsewhere the Government levees have remained intact.

The condition of levees along the entire alluvial valley is, briefly, as follows:

Saint Francis Front.—(1) From Commerce to Bird's Point, 38 miles, which is the head of the flood escape into the Saint Francis Basin, there are no levees, and no estimates have been made for closure.

(2) In the first district, Cairo to foot of Island 40, 220 miles, the levees have been neglected since their destruction in 1858; not more than 1 per cent. of the old system could be utilized in the construction of a new line. The estimate for a complete line is 8,910,000 cubic yards, at a cost of \$2,300,000.

(3) In the second district, foot of Island 40 to the Saint Francis River, 78 miles, about one-third of which is unleveed, it is estimated

that to complete the line and raise all levees to $1\frac{1}{2}$ feet above high water of 1882 will require 1,634,000 cubic yards, at a cost of about \$430,000.

White River Front.—Saint Francis River to White River, 95 miles. Less than 20 miles of this front is unleveed, but much of the remainder has too low grade. It is estimated that the entire front can be closed to 2 feet above high water for about \$150,000. The Long Lake Levee is the only Government work.

From White River to Arkansas River there are no levees.

From Arkansas River to Cypress Bayou, 25 miles, there are no front levees except a few miles more or less dilapidated. The south side of the Arkansas is leveed for about 8 miles above the mouth.

Tensas Front.—Cypress Creek to Red River, 340 miles. On the south side of Cypress Creek, the Opossum Fork Levee extends back from the river and across to Amos Ridge, 7 miles, closing the head of the Tensas Basin. From Amos Ridge to Arkansas City, for new levees, closing breaks, and raising grade to 1 foot above high water of 1882, there are required 133,000 cubic yards.

From Arkansas City to the Louisiana State Line there is required for enlargement of existing lines 526,000 cubic yards; for new levees, 976,000 cubic yards, the principal new work being at—

	Cubic yards.
Panther Forest.....	272,000
Leland	78,000
Vaocluse	179,000
Matthews Bend.....	173,000
Grand Lake.....	232,000

From the Louisiana State Line to Warrenton the levees are at present in fair condition. There are, however, caving banks, which will ultimately necessitate new levees, for which the estimated amount is 1,027,000 cubic yards. The Wilton to Raleigh Levee is the most important of those threatened.

From Warrenton to Red River the levees are believed to be above ordinary flood height, except at Diamond Island Bend (13,850 feet) and Bougère, with a small gap at Point Breeze. The estimate of the chief State engineer of Louisiana for the closure of Diamond Island Crevasse is 250,000 cubic yards, or, for a more complete line across Sargent's Point, 510,000 cubic yards. No estimates have been made for the other localities named.

In addition, it seems likely that caving will render necessary the reconstruction of Kempe Levee. (See report of Major Stickney, M. R. C. An. Rep., 1885.) The grade of Lake Concordia Levee is still too low.

On the Yazoo Front the energetic action of the State boards has kept the levees in fair condition, although much work remains to be done before that front is quite secure.

Atchafalaya Front.—The Morganza crevasse is the only point that needs special attention. The estimate for closure is 270,000 cubic yards.*

FINANCIAL STATEMENT.

Appropriation for salaries and expenses Mississippi River Commission, act of July 7, 1884.

Amount appropriated	\$75,000 00
Balance on hand July 1, 1885	22,721 24
Expended from July 1, 1885, to June 30, 1886.....	19,182 45
Balance on hand July 1, 1886	3,538 79

* Work is in progress on this levee, and it will probably be completed during the season.

Appropriation for surveys Mississippi River, act of July 5, 1884.

Amount appropriated	\$75,000 00
Balance on hand July 1, 1885.....	16,148 57
Expended from July 1, 1885 to June 30, 1886.....	14,870 26
Balance on hand July 1, 1886	1,278 31

Appropriations for improving Mississippi River, acts of March 3, 1881, August 2, 1882, and January 19 and July 5, 1884.

Balance July 1, 1885.....	\$389,978 05
Received from sale of fuel.....	220 34
Total	390,198 39
Expended from July 1, 1885, to June 30, 1886	274,326 89
Balance July 1, 1886.....	115,871 50

Estimate of funds for the Mississippi River Commission for the fiscal year ending June 30, 1888

RIVER AND HARBOR BILL.

For continuation of surveys of the Mississippi River, between the Head of the Passes, near its mouth, and its headwaters, now in progress; to make additional surveys and examinations of said river and its tributaries; to make such additional examinations and investigations, topographical, hydrographical, hydrometrical, as are necessary for maturing a plan for the permanent improvement of the entire river.....	\$100,000
--	-----------

SUNDRY CIVIL BILL.

For salaries and traveling expenses of the Mississippi River Commission, and for salaries and traveling expenses of assistant engineers under them, and for office expenses and contingencies	100,000
Estimate of funds for the improvement of the Mississippi River for the fiscal year ending June 30, 1888:	
For continuing the improvement of the Mississippi River from Cairo, Ills., to the Head of the Passes, including the improvement of the Red River at and below the head of the Atchafalaya.....	5,000,000
For the improvement of the following harbors:	
Columbus, Ky	\$61,750
Hickman, Ky.....	251,750
Memphis, Tenn	25,000
Greenville, Miss.....	148,500
New Orleans, La.....	608,600
Total.....	\$1,095,600

Q. A. GILLMORE,
Colonel of Engineers, Bvt. Maj. Gen., U. S. A.,
President Miss. River Commission.

CHAS. R. SUTER,
Major of Engineers, U. S. A.
HENRY MITCHELL,
Coast and Geodetic Survey.
B. M. HARROD.
R. S. TAYLOR.
S. W. FERGUSON.

I expressed, in the report of the Mississippi River Commission for 1883, my opinion as to the approximate heights needed for levees to give protection against overflow along the Mississippi River. I think the estimate for levees given in this report totally inadequate for any efficient system.

C. B. COMSTOCK,
Lieutenant-Colonel of Engineers.

Hon. WM. C. ENDICOTT, *Secretary of War.*
(Through the Chief of Engineers.)

List of appendices accompanying the foregoing report.

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APPENDICES.

APPENDIX A.

ANNUAL REPORT OF THE SECRETARY OF THE COMMISSION UPON THE WORK OF SURVEYS AND EXAMINATIONS.

OFFICE MISSISSIPPI RIVER COMMISSION,
2828 WASHINGTON AVENUE,
Saint Louis, Mo., July 31, 1886.

GENERAL: I have the honor to submit the following report of the work of the secretary's office and of surveys and examinations during the fiscal year ending June 30, 1886.

The operations carried on under this office for the past year have been the inspection and repair of gauges on the main river below Saint Louis and on the tributaries; the checking, compilation, and publication of gauge records; the reduction and plotting of field notes, and the preparation, publication, and distribution of maps; the printing of tabulated data, gauge records, proceedings of the Commission and reports; the reduction of the notes of discharge observations, and the computations therefrom; the reduction and compilation of physical data of the Mississippi River and alluvial valley; the classification and filing of the reports and records pertaining to the Commission; the disbursement of the funds appropriated for the expenses of the Commission, and for surveys under its direction; and the clerical work rendered necessary by these duties. At the end of the fiscal year no assistants remained on the rolls of this office, the services of all having been dispensed with from time to time because of lack of funds.

PREPARATION AND PUBLICATION OF MAPS.

Of the manuscript maps, 233 in number, of the Mississippi below Cairo, covering some 945 miles of river, 14 are finished. The others are in various stages of progress; 209 require titles and notes, and 28 require conventional signs. This series is on a scale of 1 to 10,000. From this series a series on the reduced scale of 1 to 20,000 is in process of publication. There will be 69 charts, only 9 of which have been published; the material for 30 more is prepared, awaiting funds to pay for printing.

The series on a scale of one inch to the mile, and of which a complete set of 32 charts, covering the river from Cairo to the head of the passes, has been published, requires the addition of topography from later surveys upon 9 of the sheets. To carry this series up to Keokuk will require some 14 sheets, upon which no work has been done.

The map of the alluvial valley, which shows the entire overflowed region from Cape Girardeau to the Gulf of Mexico, consisting of 8 sheets, on a scale of one inch to five miles is finished, and an edition may be printed as soon as funds are available.

The black impressions are on stone, and for security against loss, transferred copies on zinc plates are prepared and stored elsewhere. The color impressions are provided for by zinc plates.

The discharge observations, made in the season of 1884-'85, at Helena, Warrenton, Red River Landing, Old River (mouth of Red River), and at the head of the Atchafalaya have been reduced and tabulated.

Very respectfully, your obedient servant,

THOMAS TURTLE,
Captain of Engineers, Secretary Mississippi River Commission.

General Q. A. GILLMORE,
President Mississippi River Commission.

FINANCIAL STATEMENT.

Appropriation for salaries and expenses Mississippi River Commission, act of July 7, 1884:

Appropriated by act of July 7, 1884.....	\$75,000 00
Balance on hand July 1, 1885.....	22,721 24
Expended from July 1, 1885, to June 30, 1886.....	19,182 45
Balance on hand July 1, 1886.....	3,538 79

Appropriation for surveys of Mississippi River, act of July 5, 1884:

Amount appropriated.....	\$75,000 00
Balance on hand July 1, 1885.....	16,148 57
Expended from July 1, 1885, to June 30, 1886.....	14,870 26
Balance on hand July 1, 1886.....	1,278 31

Approximate value of plant belonging to the United States and used by the Mississippi River Commission in surveys and examinations of the Mississippi River.

[Appropriation for Mississippi River Commission.]

Class of property.	Approximate value, June 30, 1886.
One steamer, "Patrol".....	\$14,000
Three launches, Nos. 1, 2, 3.....	5,000
One steam tug, "Frolic".....	1,000
Six quarter boats.....	12,000
Skiffs, &c.....	700
Outfit.....	4,000
Tools and appliances.....	800
Surveying instruments.....	12,000
Drawing instruments.....	700
Office furniture.....	800
Printing press, &c.....	350
Current meters and outfit.....	1,900
Total ..	53,250

[Appropriation for Surveys of Mississippi River.]

Class of property.	Approximate value June 30, 1886.
Three launches, Nos. 4, 5, 6	\$7,500
Current meters and outfit.....	800
Outfit.....	200
Tools and appliances.....	100
Total.....	8,600

THOMAS TURTLE,

Captain of Engineers, Secretary Mississippi River Commission.

Itemized statement of expenditures of "Mississippi River Commission," appropriation of July 7, 1884.

Items.	Services assistant engineers.	Services draughtsmen, rodmen, &c.	Supplies.	Subsistence.	Transportation.	Mileage and traveling expenses.	Total.
Salaries of commissioners							\$8,250 00
Mileage and inspection.....		\$5 45	\$9 77	\$67 20	\$15 25	\$1,999 05	2,096 72
Salaries and traveling expenses, assistant engineers.....	\$3,336 67					24 50	3,361 17
Publication of maps			19 25				19 25
Office : Services, clerks, &c., \$3,994.94 ; rent, \$1,000 ; fuel, \$132.50 ; supplies, \$51.51 ; transportation, \$53.01 ; stationery, \$33.15 ; telegrams, \$26.98 ; miscellaneous, \$163.22.....							5,455 31
Total	3,336 67	5 45	29 02	67 20	15 25	2,023 55	19,182 45

SUMMARY.

Balance from appropriation of July 7, 1884	\$22,721 24
Expenditures for fiscal year ending June 30, 1886.....	19,182 45
Balance.....	3,538 79

THOMAS TURTLE,

Captain of Engineers, Secretary and Disbursing Officer Mississippi River Commission.

Itemized statement of expenditures for "Surveys of Mississippi River," act of July 5, 1884.

Items.	Services assistant engineers.	Services draughtsmen, rodmen, &c.	Outfit.	Supplies.	Photographing and printing.	Repairs.	Transportation.	Traveling expenses.	Stationery.	Fuel.	Miscellaneous.	Total.
Reduction and publication.....	\$5,857 34	\$720 41	\$16 00	\$216 69	\$404 85	\$0 50	\$8 65	\$26 75	.....	.....	\$4 50	\$7,255 69
Field work of topography.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$47 25	.....	47 25
Inspection and maintenance of gauges.....	1,375 00	3,630 50	10 40	81 36	.....	6 56	74 45	495 75	\$31 25	.....	49 70	5,754 97
Miscellaneous surveys.....	.....	.....	.....	1 00	.....	3 00	3 40	.....	.....	31 50	10 20	49 10
Care of property.....	.....	1,020 00	.....	118 50	.....	4 75	.....	.....	.....	.....	.....	1,143 25
Office: Services clerks, &c., \$420; rent, \$200.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	620 00
Total.....	7,232 34	5,370 91	26 40	417 55	404 85	14 81	86 50	522 50	31 25	78 75	64 40	14,870 26

SUMMARY.

Balance from appropriation of July 5, 1884.....	\$16,148 57
Expenditures for fiscal year ending June 30, 1886.....	14,870 26
Balance.....	1,278 31

THOMAS TURTLE,
 Captain of Engineers, Secretary and Disbursing Officer Mississippi River Commission.

A 1.

DISCHARGE OBSERVATIONS AT HAMPTON LANDING, ARK., DECEMBER 23, 1878, TO
JUNE 25, 1879.

[Extracts from the report of Mr. H. B. Herr, Assistant to Maj. W. H. H. Benyaurd, Corps of Engineers,
dated October 20, 1879.]

* * * * *

DESCRIPTION OF LOCATION.

The site selected as being most suitable for the observations, and also in the vicinity of Memphis, Tenn., as required by the order instituting the observations, was at Hampton Landing, Ark., about 12 miles by the river channel below Memphis.

Some of the considerations which led to the selection of this locality were the following, viz: a straight reach of river, high banks on both sides, a rather uniform depth of water on section across the river, a less width than elsewhere in the vicinity, and the comparatively permanent condition of the banks. Although there had been, and was during the progress of observations, much caving of the bank on Arkansas side immediately above, none was observed on either side, at the station, during the time it was occupied.

The accompanying map of location furnishes some details as to the river itself in the vicinity, and a plan of bases and cross-sections. (See Plate I.)*

OBSERVATION PARTY.

The field party was under the immediate charge of H. St. L. Coppée, C. E., with F. S. Burrowes and H. C. Wilson as Assistant Engineers. A recorder, leadsman, six oarsmen, cook, and a roustabout completed the party.

They were established at their station, with quarters on a small boat, early in December, 1878.

Owing to delay occasioned by difficulty encountered in using floats, as explained hereafter, and heavy floating ice during almost the entire month of January, but little satisfactory work was accomplished before February 1, 1879. From this date until operations were suspended, June 30, the only interruptions were those due to high winds and rain storms. Much time was lost on this account.

FLOATS.

To measure the velocity of the current the method by double floats was adopted. The first form tried was that used by Mr. T. G. Ellis on the Connecticut River, and described in his report upon the survey of that river. (See Part I of the Report of the Chief of Engineers, 1878.)

After a few trials it was found that the sub-float was not strong enough to resist the pressure of the water at a greater depth than about twenty feet. The outer cylinder would collapse, thereby reducing volume of air-chamber so greatly that the sub-float would sink to the bottom and submerge the surface-float.

To obviate this difficulty, and to secure other advantages, a modified form was constructed in which the air-chamber of sub-float was formed by placing a cylinder inside of a main one, and extending from its top to middle. A conical surface connected the bottom of inner cylinder with the main one. This main cylinder, made of heaviest tinned iron, was 12 inches long and 10 inches diameter; the inner one had a diameter of 8.7 inches. Instead of placing the lead for ballast on cross wires, as in first form, it was soldered to inside of bottom in the form of a ring.

This disposition of the lead, together with the favorable slope of bottom of air-chamber, greatly facilitated the descent of sub-float when dropped into the water, and rendered it less susceptible to the influence of ascending "whirls" and "boils," so numerous at the station occupied. The air space being concentrated about the top gave the float great stability in an upright position in the water.

For the disk-shaped surface float a cylinder 6 inches long and 4.5 in diameter, with conical ends, was substituted. The cones had altitudes of 3 and 4.5 inches, respectively, and the loop to which the cord connecting surface and sub-float was attached, was placed nearer the end having the more acute cone. This form gave greater buoyancy for the same amount of material and offered less resistance to any other than a vertical pull on the cord. This diminution of resistance permitted the sub-float to exercise a more perfect control over the movements of its surface-float. Since the velocity of sub-float is

*Not printed.

determined by locating positions of its surface-float, the importance of such control is very palpable.

Although this float resisted the water pressure much better than the first form, and was quite satisfactory for depths not exceeding about 40 feet, it also collapsed at greater depths, and, as before, submerged the surface-float.

To secure sufficient resistance to pressure at any depth it might be desirable to run floats, a third form was devised, in which, instead of one air-chamber there were sixteen, formed by soldering as many small semi-cylinders to the outside of the upper part of a main cylinder of same dimensions as the former one. The disposition of the lead was the same as before, 2 pounds being the quantity used. The greatest depth at which this float was tested was about 70 feet, but it would undoubtedly withstand the pressure at a much greater depth. It was used from February 19 until the close of field work.

The cord finally adopted for connecting surface and subfloat was a braided silk, size C. Its diameter was 0.05 inches and breaking strain about 36 pounds. Oiled silk and linen were also tried, but none appeared so durable for same thickness as the one adopted.

The volume of new surface float was 135 cubic inches, and its weight, with flag, 0.85 pounds. Deducting this weight from 4.87 pounds (the weight of pure water the above volume would displace if submerged), we have about 4 pounds for its buoyancy in river water. The displacement by subfloat when submerged was about 73.5 cubic inches, corresponding to a buoyancy of 2.65 pounds. Its weight in air was 5.7 pounds, hence weight in water, or the pull it exerted on cord, was about three pounds. The increasing density of water as depth increased diminished this tension slightly when subfloat ran deep.

To maintain surface float in a vertical line through its subfloat, though desirable, appears impracticable. But a tension of nearly 3 pounds on the cord possibly reduces the error due to curving or obliquity of cord to within very small limits.

Although the weight of authority appears to favor a subfloat of about the same density as water, several reasons appeared to require a deviation from this principle in their construction. The great importance of a possibility of locating the position of subfloat from that of its surface float, not only in a horizontal plane, but as to depth as well, demands a tension on the cord to resist its tendency to variation from a vertical line due to different velocities, or the effect of wind on surface float. It also necessitates weight in subfloat (in water) to counteract the effect of upward currents. Without these conditions a loss of control over surface float results. While it is not presumed that a tension of 3 pounds will give the best results, in the absence of proof to the contrary it was adopted; and is probably too small rather than too great.

The excess of one pound in buoyancy of surface float over that necessary to sustain the subfloat ordinarily was found beneficial in resisting the increased tension of cord due to downward currents. Also, should any of the air-chambers spring a leak, or other accident occur to increase tension, this excess of buoyancy would in many cases prevent submergence of surface float.

The three forms of floats mentioned above are represented on Plate II.* Also a diagram showing hypothetical position of floats in the water, and the effect on surface float of a lateral pull on cord. The cord being eccentrically attached to surface float, a lateral pull on cord turns the more acute cone towards the resistance met by surface float, and thereby reduces this resistance to a minimum.

TRANSIT AND OTHER INSTRUMENTS.

For measuring horizontal angles in locating the positions of soundings and floats, transit instruments were used, which read on horizontal limb, by vernier to one minute, Heller and Brightly, Philadelphia, makers.

Signals between transitmen were transmitted by key and sounder, through wire operated by two small "gravity-battery" cells.

Time was noted by an Auburndale timer. This is a stop-watch, marking quarter seconds.

Sounding-line was hempen cord 0.25 inches diameter for 12 pounds lead, and 0.35 inches for 20 pounds lead. For depths greater than 30 feet the latter weight was used. Line was graduated to feet, tenths being estimated by the eye.

WATER-GAUGE.

A water-gauge was established on the Arkansas side near station, whose zero was 4.40 feet below the zero on United States Engineer gauge at Memphis, and 33.90 feet below

* Not printed.

a bench-mark near the gauge, about 750 feet below station and near the edge of bank. This B. M. is the top of a large nail in a notch cut in a cottonwood tree.

The above reference to Memphis gauge was arrived at by a line of levels from B. M. at station to a United States Engineer B. M. corresponding to 32.56 feet, Memphis gauge, and to 36.96 feet on gauge at station. This B. M. was located by United States Engineers' survey of 1877 and 1878, and is situated about 3,000 feet above the station on the levee.

Two readings of the gauge were taken daily at 7 a. m. and 5 p. m., respectively, from December 7 to June 30, as given in the accompanying tables. The corresponding hydrograph is figured on Plate I. An estimated average force and direction of the wind during each day between the morning and evening readings of the gauge is also included in this table. The force is expressed in units of a scale ranging from 0 to 10, 0 representing a calm, and 10 the force of a hurricane.

MANNER OF OBTAINING SOUNDINGS.

Three parallel sections across the river, 100 feet apart, and perpendicular to the general direction of the current, were marked by posts on the bank. They are designated on the accompanying map by the letters A, B, and C at their extremities. From the point A, on the upper section, and near the edge of bank on Arkansas side, a base line of 815.5 feet long was laid off, having its lower extremity, C, also near the edge of bank and commanding a full view of the river in the vicinity of sections. This apparently odd length of base was taken in order that the perpendicular from its lower end to the line of upper section should be 800 feet. On account of the difficulty experienced in attempting to locate small objects on water surface at a distance so great as the width of river, a second base was established on Tennessee side 1,016.3 feet in length, and fulfilling the same conditions as the first, except that the perpendicular to the line of upper section was 1,000 feet. An even hundred feet was adopted for these perpendiculars to facilitate plotting points, located from bases, by means of tangents and cotangents.

When a set of soundings was to be taken an observer with transit instrument was stationed at each end of one of the bases. A skiff, with recorder, leadsman, and three oarsmen, was placed above upper section, bow up stream, and on same side of river as that occupied by observers.

At the signal "ready," by a flagman standing near observer at A, the skiff was allowed to float with the current, oars being out of water except when necessary to keep bow up stream. When observer at A, whose telescope had been directed on line of upper section, observed that flag carried by recorder, in the stern of skiff, was on the section, he indicated the same to flagman near by, who at once signaled to the recorder in skiff. This signal was repeated by recorder by dropping his flag who, at same time, called to leadsman, stationed about three feet in front of him, to "sound." The leadsman, having dropped the lead some time before, carrying it near and "feeling" the bottom as he approached the section, was in position to take a good sounding immediately on hearing call from recorder, and within a very short distance of the section, if not on it. This was done, and depth given by leadman repeated by recorder, and recorded. The lower observer, whose telescope had been directed on recorder's flag, as skiff moved toward section, arrested the motion of his telescope when that flag dropped, read angle his line of sight made with direction of sections and recorded it.

As skiff moved on toward middle section both telescopes were made to follow recorder's flag, lead was carried near bottom, flagman on bank moved to line of middle section, and without aid of an instrument noticed and signaled, as before, the crossing of section by recorder's flag. This signal was repeated by recorder, a sounding was made and recorded, both observers arrested the motion of their telescopes and noted angles.

A sounding was made on lower section in the same manner in every respect as on the middle one.

As soon as skiff passed the lower section it was started up stream preparatory to a repetition of the same operation at another place. After soundings had been taken over about half of the three sections in this manner, observers and flagman occupied corresponding positions on the other side of river until that day's set of soundings was completed.

The sounding line was invariably placed in water several hours before it was used, and its length was carefully tested before commencing operation, one or more times during the day, and after the day's work was completed.

The proper corrections were then applied to the recorded depths to obtain the actual depths. When the line was new the maximum change of length during a day was 0.6 feet. Later the change was very small.

Although three oarsmen sufficed for this work, they were barely able to stem the cur-

rent during the higher stages of the river and permit the taking of so many soundings in one day. The crew working during the first half day were relieved by another, who completed the day's work. As the two crews were necessary in float observations (as explained hereafter) this relief required no extra force. So strong was the current that even with this changing of crews, only superior oarsmen could have accomplished so much.

It was found that a light wind across stream would carry the skiff so far out of the vertical plane through the lead and parallel to direction of current, that quite a perceptible lateral inclination of the line resulted, and greater depths were recorded than actually existed. To avoid error on this account subsequent soundings were only taken on comparatively calm days. This precaution avoided also a portion of the error due to curving of the line in the vertical plane above mentioned, though that curving is probably due principally to different velocities in the plane beneath the surface.

After March 10 only the middle section was determined instead of the three, and soundings on it were taken on the same manner as previously. The reason for the above change will be given hereafter.

The accompanying tables of soundings include all, except the first set taken on the three sections, which are not regarded as sufficiently reliable on account of inexperience of leadman.

TO FIND THE AREA OF DISCHARGE.

The locations of all the soundings taken in a set on each section were plotted to a convenient scale by means of tangents and cotangents. From these, profiles of the three sections were constructed, all referred to the same datum line. If the plotting located any sounding so far from the line of section to which it belonged that its use might be regarded as introducing an error into the resulting profile, it was rejected. This rarely happened however.

Profiles of the three sections determined on the same day are grouped together on Plate III* showing the difference in river bottom at the sections on each day soundings were taken on them.

A mean of the three profiles thus obtained was then interpolated on the diagram, the middle section being given double weight in the interpolation. The area included between this profile and the water line was taken as area of discharge for the day on which soundings were taken.

It was observed that this area so nearly coincided with that of the middle section that it was concluded after March 10 to take the area of middle section for the area of discharge; and, as previously stated, soundings were only taken on that section after that date. This change diminished the labor of sounding greatly, while it, at the same time, increased the accuracy of profile of river bottom, as so many more soundings could be taken on a single section.

METHOD OF FINDING VELOCITIES OF CURRENT.

As previously stated, the only means used for determining velocities were those in which double floats were employed. The method was the same whichever of the three forms of floats was being used.

When a set of current velocities was to be obtained, an observer with transit instrument, stop watch, signal key, and sounder, occupied station A as in observing for soundings. The stop watch was so placed that the observer could strike the signal key by the same motion of the hand made in starting the watch, so that both operations could be performed simultaneously. A second observer with transit instrument, signal key, and sounder, occupied a station C on line of lower section near edge of bank and on same side of river as first observer. These two stations were connected by a complete wire circuit through which signals were transmitted.

A skiff with recorder, three oarsmen, and a convenient number of floats was anchored near and above upper section. Another skiff carrying three oarsmen and the leadman, before mentioned, was stationed below lower section. The length of cord on each pair of floats was marked on the floats so that recorder could readily note the depth at which any subfloat would run.

At a signal from observer at A recorder dropped a float into the water, having first recorded depth marked on float. When observer at A, whose telescope was directed on his section, observed the float cross the section he started stop-watch, at same instant struck signal key, then directed telescope on float and followed it. On hearing his sounder mark the signal given at station A the observer at C, whose telescope had been follow-

* Not printed.

ing float, arrested its motion and noted the angle its line of sight made with the direction of sections. As a check on reading stop-watch he also noted time by a small clock. He then directed telescope on his section. When float crossed his section he struck signal key and noted time. Observer at A, on hearing sounder mark signal given at C, arrested motion of telescope, at same instant stopped watch, then noted interval of time required for float to pass from upper to lower section, as indicated by watch, and the angle made by line of sight of telescope with direction of sections. After passing lower section the float was picked up by man in lower skiff.

This was repeated with other floats until a float had been run at each five feet of depth, and sometimes in low water at closer intervals. The upper skiff was then moved to a new position and anchored as before; the lower skiff in the mean time returning, the floats dropped from the former position.

This operation was repeated until the desired number of groups had been observed, or until darkness stopped the work.

When half of river on that side occupied by observers had been worked over in this way observers moved to the other side, occupying stations corresponding to those vacated. At this time, to equalize labor, the oarsmen above sections exchanged places with those below.

To expedite the transfer of floats from lower to upper skiff the latter was anchored as near the upper section as permissible and at same time, to allow subfloat sufficient time to attain its proper depth before reaching section. By a series of experiments it was ascertained that the time required for the last form of float used to reach a depth of 40 feet was about 15 seconds.

The velocity of each float was obtained by dividing 200 (the distance in feet between upper and lower sections) by the number of seconds required to pass from one section to the other. Whether they moved on a line perpendicular to sections or not, this gave the velocity in feet per second, used in determining the discharge. The object being to find mean velocities in a direction perpendicular to the area of discharge, instead of the actual velocities of particles or slender filaments in their variety of curving motions, either in a horizontal or vertical direction.

Although it was the intention from the beginning to run floats at intervals of about 200 feet across the river and at each 5 feet of depth, this anticipation was not realized until after some weeks of practice, but was eventually fully accomplished. The width of river was divided into 23 divisions of 200 feet each, commencing at a point (A on map *) on line of upper section 26 feet beyond station A. Divisions I and XXIII were not full length on water line, and they varied, of course, with each change of water gauge.

In order that a set of floats from same anchorage might be run as near the middle of a division as conveniently possible, the anchorage was made accordingly. The judgment of recorder aided by signals from observer at lower station (C) gave very good results in this regard.

To find mean velocities in each division:

To determine which division floats passed through, the points where they crossed upper and lower sections were plotted by tangents. The resulting diagrams showed that all the floats dropped from the same anchorage did not move in the same vertical plane, but varied sometimes from a mean position as much as 10 feet on either side at upper, 15 feet at middle, and 25 feet at lower section. Usually they ran within much closer limits. The paths described sometimes crossed each other, at other times were nearly coincident, or parallel. Inasmuch as the interval of time was considerable between the running of two successive floats, it was supposed that the fact of all not being actually in the same plane, was not as objectionable to their being taken as the velocities in that plane at a certain time, as the long interval of time covered in observing them. They were accordingly treated as though they had been taken simultaneously and moved in the same vertical plane perpendicular to the area of discharge.

The velocities obtained from each anchorage were plotted on cross-section paper, the coördinates of each point being the velocity and depth of float. In this manner points were located for each 5 feet of depth, or oftener, for each division separately. If a velocity had not been obtained at a regular depth interval, or if none in a division, they were supplied by interpolation, by drawing a free-hand curve through points at same depth determined for other divisions in the vicinity, on a properly constructed diagram.

Through each set of points thus plotted, or interpolated, a free hand curve was traced and produced downward in its natural course until it intersected a horizontal line drawn at a depth corresponding to that of the river bottom at the place where the set of floats crossed the middle section. The ordinate of this intersection was used as the bottom velocity and the curve just described, was regarded as the vertical velocity curve.

While it is not claimed that the intersection above mentioned gave the actual velocity

* Not published.

at the bottom, in the absence of better information its ordinate was taken as such; and a study of velocities obtained near the bottom appears to show that its adoption can introduce but a very small error into the resulting mean velocity for such vertical curve. Again, this vertical curve is evidently not the same as would have been obtained had the velocities been taken simultaneously, yet the use of it may possibly be as appropriate in determining the discharge for any day. If not only the velocities in a single curve could be taken at the same instant but in all the curves included in a complete set, then the discharge for that instant could be arrived at quite closely; but when the time required to make the observations for a complete set covers a period of from five to ten hours but little advantage can be expected, so far as getting the true discharge is concerned, through simultaneous observations for velocities in a vertical plane.

Ordinates were drawn to these curves at each tenth of depth, representing velocities at such depth. From these the mean velocity of each curve, or each division, was found by adding to the half sum of surface and bottom velocities all the intermediate ones and dividing the result by ten.

When more than one velocity was obtained at a given depth in a division their mean was used in determining the vertical curve for that division.

During the progress of operations it was discovered that a shorter method of arriving at the mean velocity in a division gave results so nearly the same as that just explained, and that the error, if any, introduced by the change in the discharge was less than that arising from inaccuracies in sounding and the changes in river bottom from day to day or hour to hour. It was consequently adopted and employed during the last two months of observation.

This method consisted in finding the area of velocity curve, determined as before, and dividing it by total depth of river where the set of floats crossed the middle section. To find this area, a mean of the observed velocities and those interpolated, if any, in a division was multiplied by the depth at which deepest float was run. In getting this mean the surface and deepest observed velocities were given half the weight of each intermediate one. To the area thus obtained was added the small area included between the ordinate of deepest observed velocity and that representing bottom velocity. This area was obtained by multiplying the half sum of bottom velocity, determined as before, and deepest observed velocity by the distance from deepest float to river bottom. For the end divisions other methods were used, depending on the number of floats run in them and the profile of bottom near the banks.

These computations were made at the station as data was collected. This accounts for the use of both methods in determining mean velocities, instead of the shorter method only. Such computations were not, however, permitted to interfere with a proper prosecution of the field work.

TO FIND DISCHARGE FROM MEAN VELOCITIES.

On a diagram of the mean of the three sections, or of the middle one when it alone was used, the divisions of 200 feet, before mentioned, were marked off by vertical lines dividing the section, or area of discharge, into twenty-three partial areas, corresponding to the twenty-three divisions for which mean velocities had been determined. These areas were computed to within a nearer approximation to accuracy than it was possible to construct the profiles on account of inaccuracies in sounding and the constant shifting of material on river bottom.

The partial areas are shown on Plate IV.*

To find discharge on any day upon which floats were observed, the partial areas, as found from the last set of soundings obtained previous to the day on which discharge was desired, were corrected for difference of water-gauge on the two days. The product of each such area in square feet by the mean velocity in feet per second, in that division, gave the discharge in cubic feet per second for each division. Their sum gave the total discharge for the day, or time covered by the observations, in cubic feet per second.

This divided by total area of section gave the mean velocity of river. The extreme velocities found in this way were on May 28, 3.107 feet per second; and January 23, 4.873 feet per second.

A set of tables containing the mean velocities and partial discharges for each day float velocities were observed, also a set giving a summary of total discharges are appended.

Extreme discharges were found on May 28, 235576 cubic feet per second; and January 24, 837991 cubic feet per second.

On Plate 1 is a diagram of discharges arranged for a comparison with other results; also a diagram of mean velocities of river similarly arranged.

*Not printed.

Discharge Observations at Hampton Landing, Ark.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
	Reading.	Rise or fall in the preceding 24 hours.	Area.		Depth.							
			Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1879.	Feet.	Feet.	Sq. ft.	Sq. ft.	Ft.	Ft.	Ft.	Ft.	Sq. ft.	Feet.	Cub. ft.	
Jan. 14	4.15	+1.3										Calm.
15	6.45	+2.1										Up, 3
16	9.45	+3.0										Down, 2
17	12.05	+2.6										Down, 3
18	13.8	+2.3	109,851	183,210	24.5	40.1	30.0	4,483	+2,535			Down, 2
19	16.0	+1.8										Down, 4
20	18.2	+2.1										Up, 5
21	20.4	+2.1										Up.
22	23.0	+2.6	156,706	188,573	34.4	41.2	40.6	4,553	+5,363			Up, 5
23	25.0	+2.3	166,065							4.873	809,239	Calm.
24	26.4	+1.4	172,442							4.860	837,991	Calm.
25	27.25	+1.0										Calm.
26	27.8	+0.6										Down, 3
27	28.2	+0.4										Up, 2
28	28.45	+0.3										Up, 1
29	28.6	+0.2										Up, 1
30	28.5	-0.1	187,365	194,210	41.0	42.5	47.6	4,569	+5,637			Down, 1
31	28.1	-0.3										Down, 6
Feb. 1	27.45	-0.6										Down, 5
2	26.7	-0.8	178,583							4.543	811,256	Calm.
3	25.9	-0.7										Up, 5
4	25.4	-0.6										Down, 3
5	25.4	-0.1	172,664							4.503	777,568	Down, 3
6	25.3	-0.1	172,209							4.546	782,935	Down, 3
7	25.3	0.0	172,209							4.541	781,909	Calm.
8	25.7	+0.3	174,030							4.601	800,759	Calm.
9	26.2	+0.5										Calm.
10	26.65	+0.4										Up, 6
11	26.95	+0.4										Up, 5
12	27.0	+0.1	179,948							4.587	825,454	Up, 3
13	26.7	-0.2										Down, 6
14	26.15	-0.5										Down, 4
15	25.4	-0.7	172,664							4.471	772,011	Down, 1
16	24.25	-1.1										Calm.
17	23.1	-1.1										Down, 3
18	21.5	-1.4	149,671	188,338	32.9	41.2	39.4	4,544	-5,872			Across, 1
19	19.8	-1.8	141,921							3.976	564,297	Up, 2
20	18.2	-1.6	134,682							3.985	536,654	Down, 1
21	17.0	-1.4	129,269							3.826	494,608	Up, 2
22	16.6	-0.6										Up, 6
23	17.15	+0.4										Calm.
24	17.7	+0.6	132,404							3.960	524,384	Up, 2
25	18.35	+0.6										Up, 5
26	18.75	+0.5										Down, 4
27	19.0	+0.3	138,296							4.110	568,398	Calm.
28	19.1	+0.1	138,749							4.129	572,930	Up, 3
Mar. 1	18.95	-0.1										Up, 2
2	18.7	-0.2										Down, 4
3	18.25	-0.5										Down, 2
4	17.8	-0.4										Calm.
5	17.5	-0.4	131,505							3.934	517,325	Calm.
6	17.2	-0.3	130,145							3.925	510,807	Up, 1
7	17.1	-0.1	129,691							3.817	495,085	Calm.
8	17.0	-0.1										Up, 4
9	17.0	0.0										Up, 4
10	16.9	-0.1										Up, 4
11	16.8	-0.1	126,121	186,128	27.9	40.7	34.1	4,509	-2,210			Down, 1
12	16.4	-0.3	124,319							3.931	488,665	Down, 1
13	16.1	-0.3	122,967							3.955	486,306	Calm.
14	16.05	-0.2										Down, 3
15	16.35	+0.3										Down, 4
16	17.15	+0.7										Down, 3
17	18.05	+0.8										Down, 5
18	19.05	+1.0										Down, 1
19	19.8	+0.9	139,696							4.157	580,776	Calm.
20	20.45	+0.6										Up, 5
21	21.2	+0.7	146,062							4.279	625,062	Down, 2
22	21.8	+0.7	148,791							4.351	647,363	Down, 2
23	22.25	+0.5										Calm.
24	22.5	+0.3	155,598	189,795	34.1	41.5	40.7	4,558	+3,667			Across, 2

Discharge Observations at Hampton Landing, Ark.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
	Reading.	Rise or fall in the preceding 24 hours.	Area.		Depth.							
			Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1879.	Feet.	Feet.	Sq. ft.	Sq. ft.	Ft.	Ft.	Ft.	Ft.	Sq. ft.	Feet.	Cub. ft.	
Mar. 25	22.9	+0.3	157,422							4.270	672,243	Up, 1
26	23.5	+0.5										Up, 5
27	24.1	+0.7										Calm.
28	24.6	+0.5	165,182							4.444	734,051	Up, 2
29	25.05	+0.5										Up, 5
30	25.2	+0.1										Down, 5
31	25.2	+0.1										Up, 5
April 1	25.15	0.0										Down, 4
2	25.1	-0.1	167,464							4.356	729,447	Up, 1
3	24.85	-0.2										Down, 4
4	24.7	-0.2										Down, 5
5	24.5	-0.1	164,722							4.367	719,351	Calm.
6	24.5	-0.1										Up, 5
7	24.7	+0.2	164,752	188,916	36.1	41.3	44.5	4,566	-879			Down, 3
8	24.75	0.0										Calm.
9	24.8	+0.1										Across, 6
10	24.75	0.0										Up, 6
11	24.3	-0.4										Down, 4
12	23.7	-0.5	160,192							4.230	677,640	Calm.
13	23.2	-0.6										Calm.
14	22.9	-0.4										Up, 5.
15	23.3	+0.3	158,368							4.216	667,716	Calm.
16	23.85	+0.5										Down, 4
17	24.3	+0.6										Down, 4
18	24.45	+0.1										Down, 5
19	24.6	+0.2										Up, 4
20	24.5	-0.1										Down, 4
21	24.35	-0.1										Up, 4
22	24.0	-0.3										Up, 6
23	23.6	-0.4	159,736							4.272	682,429	Up, 2
24	22.8	-0.5	156,111							4.205	656,483	Up, 1
25	22.4	-0.5	154,294							4.118	635,306	Calm.
26	21.75	-0.7										Calm.
27	20.9	-1.0										Across, 4
28	19.9	-0.7	142,970							4.032	576,409	Down, 1
29	18.7	-1.4	137,632							3.894	535,902	Calm.
30	17.7	-1.1	125,421	181,379	27.8	39.7	35.6	4,514	-7,537			Calm.
May 1	16.7	-0.9										Down, 4
2	15.7	-0.9	116,431							3.738	435,220	Down, 1
3	14.75	-1.0										Up, 6
4	13.8	-1.0										Up, 2
5	13.0	-0.9	106,938	184,011	23.9	40.2	31.5	4,472	+2,632			Calm.
6	12.05	-0.9										Down, 3
7	11.25	-0.8										Down, 3
8	10.6	-0.7	96,234							3.417	328,866	Down, 1
9	9.9	-0.7	93,112							3.353	312,182	Calm.
10	9.3	-0.5	90,447							3.207	290,044	Up, 2
11	8.85	-0.6										Up, 2
12	8.5	-0.3										Up, 3
13	8.2	-0.3	85,135	183,563	19.3	40.1	25.4	4,413	-448			Up, 1
14	8.2	-0.1	85,135							3.178	270,518	Up, 1
15	8.0	-0.2	84,253							3.158	266,087	Up, 1
16	7.9	-0.1	83,812							3.234	271,011	Down, 2
17	7.8	-0.1	83,371							3.210	267,618	Calm.
18	7.55	-0.2										Calm.
19	7.3	-0.2	80,174	182,573	18.2	39.9	23.7	4,402	-990			Calm.
20	7.2	-0.2	79,734							3.169	252,647	Calm.
21	7.1	0.0	79,294							3.220	255,328	Calm.
22	7.1	-0.1	79,294							3.220	255,342	Down, 1
23	7.0	-0.1	78,853							3.231	254,786	Calm.
24	6.75	-0.2										Up, 4
25	6.45	-0.3										Calm.
26	6.2	-0.2	76,699	183,933	17.5	40.2	23.9	4,395	+1,360			Calm.
27	6.1	-0.2	76,260							3.112	237,343	Calm.
28	6.0	0.0	75,820							3.107	235,576	Calm.
29	6.0	-0.1	75,820							3.115	236,163	Up, 2
30	6.0	0.0										Up, 4
31	6.1	0.0										Up, 4
June 1	6.45	+0.3										Across, 4

Discharge Observations at Hampton Landing, Ark.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
	Reading.	Rise or fall in the preceding 24 hours.	Area.		Depth.							
			Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1879.	<i>Feet.</i>	<i>Feet.</i>	<i>Sq. ft.</i>	<i>Sq. ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Sq. ft.</i>	<i>Feet.</i>	<i>Cub. ft.</i>	
June 2	7.05	+0.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	Down, 4
3	7.6	+0.6	81,993	183,064	18.6	40.0	24.8	4,410	—869	.....	.....	Calm.
4	8.4	+0.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	Up, 3.
5	9.0	+0.6	88,177	.....	.....	.....	.....	.....	.....	3.397	299,542	Up, 1.
6	9.5	+0.5	90,393	.....	.....	.....	.....	.....	.....	3.572	322,922	Calm.
7	10.0	+0.5	92,618	.....	.....	.....	.....	.....	.....	3.528	326,757	Down, 1
8	10.65	+0.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	Calm.
9	11.0	+0.5	97,696	183,749	21.9	40.2	27.4	4,453	+685	.....	.....	Calm.
10	11.1	+0.1	98,142	.....	.....	.....	.....	.....	.....	3.526	346,079	Calm.
11	11.0	—0.1	97,696	.....	.....	.....	.....	.....	.....	3.526	344,475	Up, 1.
12	10.9	—0.1	97,250	.....	.....	.....	.....	.....	.....	3.538	344,060	Calm.
13	10.8	0.0	96,805	.....	.....	.....	.....	.....	.....	3.593	347,844	Calm.
14	10.7	—0.2	96,359	.....	.....	.....	.....	.....	.....	3.448	332,233	Up, 1.
15	10.35	—0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	Up, 2.
16	10.1	—0.3	93,693	.....	.....	.....	.....	.....	.....	3.571	334,588	Down, 1
17	9.9	—0.2	91,977	183,019	20.7	40.0	26.9	4,444	—730	.....	.....	Down, 1
18	10.0	+0.1	92,422	.....	.....	.....	.....	.....	.....	3.606	333,250	Down, 2
19	10.0	0.0	92,422	.....	.....	.....	.....	.....	.....	3.551	328,184	Down, 1
20	9.9	—0.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	Up, 3.
21	9.8	—0.1	91,533	.....	.....	.....	.....	.....	.....	3.414	312,443	Up, 2.
22	9.85	0.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	Down, 1
23	10.0	+0.2	92,422	.....	.....	.....	.....	.....	.....	3.484	321,982	Across, 1
24	10.5	+0.4	94,646	.....	.....	.....	.....	.....	.....	3.593	340,107	Up, 1.
25	10.9	+0.5	96,437	.....	.....	.....	.....	.....	.....	3.575	344,751	Up, 1.
26	11.25	+0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	Up, 2.
27	11.1	0.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	Up, 3.
28	10.85	—0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	Up, 3.
29	10.6	—0.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	Down, 3
30	10.35	—0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	Down, 2

APPENDIX B.

REPORT OF CAPTAIN THOMAS TURTLE, CORPS OF ENGINEERS, SECRETARY OF COMMITTEE ON CONSTRUCTION.

THE MISSISSIPPI RIVER COMMISSION,
OFFICE OF THE COMMITTEE ON CONSTRUCTION,
2653 Olive Street, Saint Louis, Mo., June 30, 1886.

SIR: I have the honor to submit the following report of the work of this office for the fiscal year ending June 30, 1886:

Capt. J. H. Willard, Corps of Engineers, on duty in charge of this office since April 11, 1884, was only relieved by me on June 19 last, so my connection with the committee is simply to record thus summarily the operations for the year, and I shall soon transfer the duties to my appointed successor, Lieut. James L. Lusk, Corps of Engineers.

The suspension of work upon the river, because of the failure of appropriations in the session of Congress ending March 3, 1885, has reduced operations to such as are necessary for the care of the plant, and to such work in the office as could be performed with the small force permitted under the circumstances.

At the time of the last annual report the general-service plant was laid up in harbor at Twin Hollows, about 15 miles below Saint Louis, where it remained till the end of October, 1885, when the filling of the harbor by sediment under the action of the works at that point compelled its removal to some other locality. After examination the bight at Chester was chosen, permission having been obtained from the owners of the adjacent land to occupy about 2,000 feet along the shore. The fleet has remained there since that time, and, with constant work sparring off and ice-cutting along the shore, escaped injury during the very inclement winter season of 1885-'86.

The whole of the commission fleet and a part of the general-service fleet were torn from moorings by a tornado on May 11 and carried across the river and down Mary Chute. The property was finally landed by the tow-boat R. S. Hayes, of the Mississippi Valley line, and was returned to harbor by the Minnetonka.

The roof of the steamer Mississippi has been entirely recovered, and that of the Minnetonka has been repainted and sanded; it was expected that the latter would be renewed last spring, but want of funds has prevented this.

Three thousand one hundred and sixty-five yards of stone were purchased in November for use at Hopefield Bend for 50 cents per cubic yard, loaded on the barges, and the expenses of delivery brought its cost to about 94 cents per cubic yard at the work. Eighty-five cents would probably be a fair average under the conditions of active operations. In this service, barge 187 struck a submerged pile, and, sinking, became a total loss.

During the year the following services have been performed by the steamers: The Commission were carried on a tour of inspection of the works upon the river from Keokuk to New Orleans in November by the Mississippi, and three barges were taken from Red River, and one pile-driver from Vicksburg, to Wilson's Point on the return trip.

The Minnetonka, in November and December, towed the stone purchased at Chester to the work at Memphis; in February assisted in collecting the fleet of United States boats torn away by ice from moorings at Carroll's Island; brought back the commission fleet and that portion of the general-service fleet blown away by the tornado of May 11, and at the end of the year was engaged in towing stone from Chester to Memphis. This stone was for use in work of bank protection undertaken by citizens of Memphis, and for which the use of the needed Government plant was permitted by the Secretary of War.

Attention is respectfully invited to Captain Willard's report of last year in reference to the advantages of the ownership of its plant by the United States, and to the increase of the same, to the best model of barge for carrying stone, to the purchase of Illinois coal, and to the building of the new tow-boats. The recommendations are, of course, to be considered in connection with the amount of the next appropriation and its application.

The working drawings are prepared complete for two iron and steel hulled tow-boats; the one 180 feet long, 30-feet beam, and 5 feet 8 inches depth of hold; the other 135 feet long, 26-feet beam, and 5 feet hold. Thorough surveys have been made of the existing wooden-hulled tow-boats, Minnetonka, Osceola, and Emma Etheridge, and drawings in full detail are made of the first and second, and those of the last are under way.

The expenditures for general service are apportioned among the districts according to the work done; those for outfit and repairs and for care of plant are divided equally among the first, second, and third.

The amount available for general service July 1, 1885, was \$127,809.68, of which \$20,527.75 has been expended and \$17,036.80 charged to districts; \$7,600 transferred to Plum Point, \$33,900 to Memphis Reach, \$29,215.04 to Lake Providence Reach, \$250 to Vicksburg Harbor (Delta Point), \$4,000 to New Orleans Harbor, \$10,500 to mouth of Red River, and \$1,000 to Texas Front Levee (fourth district).

The balance available July 1, 1886, is \$20,816.89.

I present herewith directory of the commission, with its officers and districts under improvement, estimates for general service 1886-'87, statement of plant, detailed statement of expenditures by the general service, detailed financial statement of all expenditures from July 1, 1885, to June 30, 1886, and a general statement of appropriations and expenditures from March 3, 1881, to June 30, 1886.

THE MISSISSIPPI RIVER COMMISSION.

Col. and Bvt. Maj. Gen. Quincy A. Gillmore, Corps of Engineers, President, 33 West Houston street, New York.

Lieut. Col. and Bvt. Brig. Gen. Cyrus B. Comstock, Corps of Engineers, Willets Point, New York Harbor.

Maj. Charles R. Suter, Corps of Engineers, 1415 Washington avenue, Saint Louis.

Henry Mitchell, civil engineer, office U. S. Coast and Geodetic Survey, Washington, D. C.

B. M. Harrod, civil engineer, Cotton Exchange Building, New Orleans.

Hon. Robert S. Taylor, P. O. Box 1648, Fort Wayne, Ind.

S. W. Ferguson, civil engineer, Greenville, Miss.

Capt. Thomas Turtle, Corps of Engineers, Secretary, 2828 Washington avenue, Saint Louis.

THE COMMITTEE ON CONSTRUCTION.

Messrs. Gillmore, Comstock, Suter, and Harrod.

Capt. Thomas Turtle, Corps of Engineers, Secretary and Assistant, 2653 Olive street, Saint Louis.

Officers of Corps of Engineers in charge of districts.

Districts.	Name and address of officer in charge.	Extent of district.
		<i>Miles.</i>
Des Moines Rapids to Illinois River.....	Capt. Ernest H. Ruffner, Quincy, Ill..	165
Illinois River to Ohio River.....	Maj. Oswald H. Ernst, custom-house, Saint Louis, Mo.	245
First district—Ohio River to foot of Island No. 40..	Capt. Smith S. Leach, custom-house, Cairo, Ill., and Elmot, Ark.	220
Second district—Foot of Island No. 40 to White River.	Capt. Smith S. Leach, 280 Front street, Memphis, Tenn.	180
Third district—White River to Warrenton, Miss...	Capt. William T. Rossell, Memphis, Tenn., and Wilson's Point, La.	220
Fourth district—Warrenton to Head of Passes.....	Maj. Charles W. Raymond, 3 South Rampart street, New Orleans, La.	484

General service estimates, 1886-'87.

One large steel tow-boat	\$55, 000	
One small steel tow-boat	35, 000	
		<u>\$90, 000</u>
11 coal barges	22, 000	
12 small gunwale barges	24, 000	
32 large gunwale barges	96, 000	
		<u>232, 000</u>
General repairs to plant on resuming operations	20, 000	
General and extraordinary repairs during year	10, 000	
		<u>30, 000</u>
		<u>262, 000</u>

Running expenses of tow-boats:

Mississippi, eight months, at \$3,400	27, 200	
Minnetonka, ten months, at \$3,600	36, 000	
New large tow-boat, three months, at \$3,600	10, 800	
New small tow-boat, three months, at \$2,400	7, 200	
	81, 200	
500,000 bushels Illinois coal, on board, at 8 cents	40, 000	
		<u>121, 200</u>
Office, salaries, rent, and contingencies	12, 000	
Administration and inspection	5, 000	
Fleet and care of property	4, 000	
		<u>21, 000</u>
		<u>404, 200</u>

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River, general service, June 30, 1886.

1 steamer, Mississippi	\$54, 000
1 steamer, Minnetonka	36, 000
1 pump-boat	900
1 store-boat	450
2 sounding-boats	36
28 barges (flush deck)	30, 240
27 barges (low deck)	43, 560
Office furniture	360
Total value	<u>165, 546</u>

Expenditures on account of appropriation for improving Mississippi River, no limit, from allotment for general service, from July 1, 1885, to June 30, 1886.

Plant and outfit	\$803 67
Repairs to plant	919 21
Care of public property	6,330 08
Administration and inspection	664 41
Office expenses, rent and repairs	5,217 53
Expenses delivering stone to second district	1,386 21
Expenses steamer Mississippi on tour of inspection	3,490 95
Expense of moving fleet	851 91
Extraordinary expense in breaking up of ice	378 76
Rescuing barges from ice in winter of 1885-'86	96 00
Extraordinary expense during dispersion of fleet by tornado in May, 1886	271 62
Towage and transportation	117 40
Total	20,527 75

The above expenditures are apportioned as follows:

To first district	5,178 53
To second district	6,564 73
To third district	5,178 54
To fourth district	115 00
Unapportioned	3,490 95
Total	20,527 75

Financial statement, July 1, 1885, to June 30, 1886.

General Service:

Available July 1, 1885	\$127,809 68
Transferred to first district	\$7,600 00
Transferred to second district	33,900 00
Transferred to third district	29,465 04
Transferred to fourth district	15,500 00
Expenditures apportioned to June 30	17,036 80
	103,501 84
Balance	24,307 84
Unapportioned expenditure fourth quarter, 1885	3,490 95
Balance in Treasury	15,026 87
Balance in hand	5,790 02
	20,816 89

Des Moines Rapids to Illinois River:

Available July 1, 1885	86,758 05
Received from sale of fuel	78 75
	86,836 80
Expended	59,007 74
Balance in Treasury	15,000 00
Balance in hand	12,829 06
	27,829 06

Illinois River to Ohio River and protection of the easterly bank of the Mississippi near Cairo:

Available July 1, 1885	112,860 03
Received from sale of fuel	56 17
	112,916 20
Expended, Illinois River to Ohio River	66,179 29
Expended, Cairo	5,427 26
	71,606 55
Balance in Treasury	40,000 00
Balance in hand	1,309 65
	41,309 65

New Madrid Reach:

Available July 1, 1885	\$2, 138 09
(Transferred to Plum Point Reach).	

Plum Point Reach:

Available July 1, 1885	\$16, 505 11	
Drawn from Treasury for general service	5, 178 53	
Transferred from general service	7, 600 00	
Transferred from New Madrid Reach	2, 138 09	
Transferred from Saint Francis Front	126 89	
		31, 548 62
Expended		30, 021 60
Balance in hand		1, 527 02

Saint Francis Front (first district):

Available July 1, 1885	126 89
(Transferred to Plum Point Reach).	

Memphis Reach:

Available July 1, 1885	69 24	
Received from sale of fuel	6 67	
Drawn from Treasury for general service	6, 564 74	
Transferred from general service	33, 900 00	
		40, 540 65
Expended		34, 738 54
Balance in Treasury	1, 400 00	
Balance in hand	4, 402 11	
		5, 802 11

Memphis Harbor:

Available July 1, 1885	1, 441 53
Expended	210 00
Balance in hand	1, 231 53

Saint Francis Front (second district):

(Allotment expended before July 1, 1885.)

Survey of Helena Reach:

(Allotment expended July 1, 1885.)

Lake Providence Reach:

Available July 1, 1885	\$22, 070 45	
Received from sale of fuel	78 75	
Drawn from Treasury for general service	5, 178 54	
Transferred from Yazoo Front	171 05	
Transferred from general service	29, 215 04	
		56, 713 83
Transferred to Tensas Front	2, 000 00	
Expended	48, 716 98	
		50, 716 98
Balance in Treasury	3, 215 04	
Balance in hand	2, 781 81	
		5, 996 85

Vicksburg Harbor (dredging):

(Allotment expended before July 1, 1885.)

Vicksburg Harbor (Delta Point):

Available July 1, 1885	3, 682 88	
Transferred from general service	250 00	
		3, 932 88
Expended		3, 872 29
Balance in hand		60 59

Survey of Unleveed Fronts (third district):

(Allotment expended before July 1, 1885.)

Choctaw Bend Survey:

(Allotment expended before July 1, 1885.)

New Orleans Harbor:

Available July 1, 1885.....	\$596 57	
Transferred from general service.....	4,000 00	
Transferred from survey Cubitt's Gap.....	162 86	
Transferred from levee Atchafalaya Front.....	1,400 00	
		\$6,159 43
Expended.....		4,151 78
Balance in hand.....		2,007 65

Mouth of Red River:

Available July 1, 1885.....	3,816 08	
Drawn from treasury for general service.....	115 00	
Transferred from general service.....	10,500 00	
Transferred from levees Atchafalaya Front.....	1,400 00	
		15,831 08
Expended.....		11,466 65
Balance in Treasury.....	3,500 00	
Balance in hand.....	864 43	
		4,364 43

Natchez and Vidalia:

Available July 1, 1885.....	1,625 95	
Expended.....	625 30	
Balance in hand.....		1,000 65

Observations at Carrollton:

(Allotment expended before July 1, 1885.)

Survey of Unleveed Fronts (fourth district):

(Allotment expended before July 1, 1885.)

Survey of Cubitt's Gap:

Available July 1, 1885.....	162 86	
(Transferred to N. O. Harbor.)		

Levees, (second district):

*(Yazoo Front.—Allotment expended before July 1, 1885.)**(Long Lake.—Allotment expended before July 1, 1885.)*

Levees (third district):

Tensas Front:

Available July 1, 1885.....	32 26	
Transferred from Lake Providence.....	2,000 00	2,032 26
Expended.....		32 26
Balance in hand.....		2,000 00

Yazoo Front:

Available July 1, 1885.....		174 55
Expended.....	3 50	
Transferred to Lake Providence.....	171 05	174 55
Balance.....		0 00

(Opossum Fork.—Allotment expended before July 1, 1885.)

Levees (fourth district):

Atchafalaya Front:

Available July 1, 1885.....		\$9,496 07
Transferred to New Orleans harbor.....	\$1,400 00	
Transferred to Mouth of Red River.....	1,400 00	
Transferred to Tensas Front.....	3,400 00	
Expended.....	2,784 72	
		<u>8,984 72</u>
Balance in hand.....		511 35

Tensas Front:

Available July 1, 1885.....	611 76	
Transferred from Atchafalaya Front.....	3,400 00	
Transferred from general service.....	1,000 00	
		<u>5,011 76</u>
Expended.....		3,598 04
		<u>1,413 72</u>
Balance in Treasury.....	1,000 00	
Balance in hand.....	413 72	
		<u>1,413 72</u>
Total available July 1, 1885 (levees).....	10,314 64	
Transferred from Lake Providence.....	2,000 00	
Transferred from general service.....	1,000 00	
		<u>13,314 64</u>
Transferred to Lake Providence.....	171 05	
Transferred to New Orleans Harbor.....	1,400 00	
Transferred to mouth of Red River.....	1,400 00	
Expended.....	6,418 52	
		<u>9,389 57</u>
Balance in Treasury.....	1,000 00	
Balance in hand.....	2,925 07	
		<u>3,925 07</u>
Total available July 1, 1885, for improving Mississippi River.....	389,978 05	
Received from sale of fuel.....	220 34	
		<u>390,198 39</u>
Expended.....		274,326 89
		<u>115,871 50</u>
Balance available July 1, 1886, to meet liabilities and to carry on work under the Mississippi River Commission.....		115,871 50

Statement of funds available for improving Mississippi River, from March 3, 1881, to June 30, 1886.

Act of March 3, 1881.....	\$1,000,000 00
Act of August 2, 1882.....	4,123,000 00
Act of January 19, 1884.....	1,000,000 00
Act of July 5, 1884, less \$5,000 transferred to snag-boat service.....	2,065,000 00
	<u>8,188,000 00</u>
Total specific appropriations.....	8,188,000 00
Balances from former appropriations applied to works below Cairo under act of August 2, 1882, less \$123.42, reverted to Treasury.....	\$272,504 96
Same for works above Cairo, under act of July 5, 1884.....	22,632 53
	<u>295,137 49</u>
Total balances.....	295,137 49
Received from sales and loss of property.....	631 41
	<u>8,483,768 90</u>
Total available.....	8,483,768 90
Expended to June 30, 1886.....	8,367,897 40
	<u>115,871 50</u>
Balance available July 1, 1886.....	115,871 50

Detailed statement of funds applied to improving Mississippi River, under the Mississippi River Commission, from March 3, 1881, to June 30, 1886.

Districts.	From appro- priations.	From bal- ances.	From sales.	Total avail- able.	Expended.	Balances in treasury.	Balances in hand.	Total bal- ances.
Des Moines Rapids to Illinois River.....	\$195,000 00	\$12,663 33	\$122 64	\$207,786 02	\$179,956 96	\$15,000 00	\$12,829 06	\$27,829 06
Illinois River to Ohio River	470,000 00	9,969 15	126 60	480,095 75	455,518 85	24,000 00	576 90	24,576 90
Protection, near Cairo.....	50,000 00	.....	.....	50,000 00	33,267 25	16,000 00	732 75	16,732 75
Survey Saint Francis Front	520,000 00	9,969 15	126 60	530,095 75	488,786 10	40,000 00	1,309 65	41,309 65
New Madrid Reach.....	4,873 11	.....	.....	4,873 11	4,873 11	.....	.....	.....
Plum Point Reach.....	210,361 91	.....	2 83	210,364 74	210,364 74	.....	.....	.....
Totals, first district	2,410,468 04	.....	99 70	2,410,567 74	2,409,040 72	.....	1,527 02	1,527 02
Survey Saint Francis Front	2,625,703 06	.....	102 53	2,625,805 59	2,624,278 57	.....	1,527 02	1,527 02
Survey Helena Reach	4,000 00	.....	.....	4,000 00	4,000 00	.....	.....	.....
Levees:	8,000 00	.....	.....	8,000 00	8,000 00	.....	.....	.....
Long Lake.....	15,000 00	.....	.....	15,000 00	15,000 00	.....	.....	.....
Yazoo Front.....	80,950 00	.....	.....	80,950 00	80,950 00	.....	.....	.....
Memphis Harbor	200,000 00	.....	22 50	200,022 50	198,790 97	.....	1,231 53	1,231 53
Memphis Reach.....	517,586 54	.....	27 14	517,613 68	511,811 57	1,400 00	4,402 11	5,802 11
Totals, second district	825,536 54	.....	49 64	825,586 18	818,552 54	1,400 00	5,633 64	7,033 64
Survey unleveed fronts.....	1,000 00	.....	.....	1,000 00	1,000 00	.....	.....	.....
Survey Choctaw Reach.....	2,679 86	.....	.....	2,679 86	2,679 86	.....	.....	.....
Levees:	.....	.....	.....	.....	.....	.....	.....	.....
Opossum Fork	25,000 00	.....	.....	25,000 00	25,000 00	.....	.....	.....
Yazoo Front.....	364,878 95	.....	.....	364,878 95	364,878 95	.....	.....	.....
Tensas Front.....	413,140 00	.....	.....	413,140 00	411,140 00	.....	2,000 00	2,000 00
Vicksburg Harbor:	.....	.....	.....	.....	.....	.....	.....	.....
Dredging.....	61,812 12	.....	.....	61,812 12	61,812 12	.....	.....	.....
Delta Point	93,736 46	25,770 13	.....	119,506 59	119,446 00	.....	60 59	60 59
Lake Providence Reach	2,294,780 81	.....	218 75	2,294,999 56	2,289,002 71	3,215 04	2,781 81	5,996 85
Totals, third district.....	3,257,028 20	25,770 13	218 75	3,283,017 08	3,274,959 64	3,215 04	4,842 40	8,057 44
Survey Cubitt's Gap	137 14	.....	.....	137 14	137 14	.....	.....	.....
Survey unleveed fronts.....	1,000 00	.....	.....	1,000 00	1,000 00	.....	.....	.....
Observations at Carrollton	3,000 00	.....	.....	3,000 00	3,000 00	.....	.....	.....
Bonnet Carre Crevasse	15,000 00	.....	.....	15,000 00	15,000 00	.....	.....	.....
Natchez and Vidalia Harbors .....	.....	8,252 04	.....	8,252 04	7,251 39	.....	1,000 65	1,000 65
New Orleans Harbor	7,823 47	147,670 39	.....	155,493 86	153,486 21	.....	2,007 65	2,007 65
Mouth of Red River	23,405 00	90,812 40	.....	114,217 40	109,852 97	3,500 00	864 43	4,364 43

Detailed statement of funds applied to improving Mississippi River, under the Mississippi River Commission, from March 3, 1881, to June 30, 1886—Cont'd.

Districts.	From appro- priations.	From bal- ances.	From sales.	Total avail- able.	Expended.	Balances in treasury.	Balances in hand.	Total bal- ances.
Levees:								
Tensas Front.....	\$553,270 00	.....	.....	\$553,270 00	\$551,856 28	\$1,000 00	\$413 72	\$1,413 72
Atchafalaya Front.....	136,800 00	.....	.....	136,800 00	136,288 65	.....	511 35	511 35
Totals, fourth district.....	740,435 61	\$246,734 83	.....	987,170 44	977,872 64	4,500 00	4,797 80	9,297 80
General service.....	24,296 59	.....	\$11 25	24,307 84	3,490 95	15,026 87	5,790 02	20,816 89
Grand totals	8,188,000 00	295,137 49	631 41	8,483,768 90	8,367,897 40	79,141 91	36,729 59	115,871 50

THOMAS TURTLE,
Captain of Engineers, Secretary of Committee on Construction.

Gen. Q. A. GILLMORE,
Corps of Engineers, President Mississippi River Commission.

APPENDIX C.

REPORT OF CAPTAIN E. H. RUFFNER, CORPS OF ENGINEERS, UPON THE IMPROVEMENT OF THE MISSISSIPPI RIVER BETWEEN THE DES MOINES RAPIDS AND THE MOUTH OF THE ILLINOIS RIVER.

UNITED STATES ENGINEER OFFICE,
Quincy, Ill., July 20, 1886.

SIR: I have the honor to submit the following report of operations for the improvement of the Mississippi River from the Des Moines Rapids to the mouth of the Illinois River, Illinois and Missouri, for fiscal year ending June 30, 1886.

Having made a personal inspection of the district, from the 22d to the 26th June, and examined the condition of all works of construction, and also the needs of various points of bad navigation, I recommended that the first work to be done be the repair of three closing dams at and near Slim Island, which were put in in 1879, and now needed considerable repair in order to maintain the existing good condition of the channel and river in this vicinity.

Previous to doing this it was found necessary to repair a break in the shore protection and east end of the closing dam at Denmark Island, covering a distance of 487 feet.

Material used.

Stone	-----cubic yards	1,238.89
Brush	-----do	970.61

Total cost, \$2,089.02, or about \$0.945 per cubic yard.

The repairs of the closing dam between Carroll and Coon Islands, consisting of strengthening the shore protection, and raising the dam to 5 feet above low water, were completed in July.

Material used.

Stone	-----cubic yards	2,382.48
Brush	-----do	1,670.00

Total cost, \$3,681.29, or about \$0.908 per cubic yard.

The repairs to the closing dam between Carroll Island and the Illinois shore were similar in character to the last described. Begun in July, finished in August.

Material used.

Stone	-----cubic yards	4,846.44
Brush	-----do	2,005.06
Poles	-----number	1,592

Total cost \$7,212.98, or about \$1.052 per cubic yard.

The repairs to the closing dam between Slim Island and the Missouri shore, similar in character to the above, were begun August 29, and completed in September.

Material used.

Stone	-----cubic yards	3,183
Brush	-----do	1,834
Poles	-----number	1,290

Total cost, \$4,566.96, or about \$0.910 per cubic yard.

On September 20 a closing dam was begun across Westport Chute, about 800 feet below the head of the island. The dam is about 1,100 feet long, and consists of a brush sill 60 feet wide, weighted with gravel, dredged near Hamburg, and on this a dam composed of alternate layers of gravel and stone. Shore protections on Westport Island 800 feet in length, and 500 feet on the Missouri shore, were also placed. The dam was nearly completed by the end of October, and low water forced a suspension of work.

Material used.

Stone	-----cubic yards	7,412.72
Brush	-----do	4,248.88
Poles	-----number	2,465

Dredged material, cubic yards 9,928 of which probably one-half may be considered as remaining in the dam. Total amount of material in the dam, 16,600 cubic yards. Cost

of dredged material, \$0.094 per cubic yard; cost of stone and brush, \$0.811 per cubic yard; total cost of the work, \$10,409.45.

On October 22 a beginning was made towards a closing-dam across the small chute between North and South Fritz Islands. This dam is about 420 feet long, of the same construction as that at Westport Chute, but there being no gravel within a reasonable distance brush was used in the body of the dam. Protection on North Fritz 200 feet in length, and on South Fritz 150 feet below the dam and 450 around the head of the island. This dam was completed in great part and the fleet left November 21 for Cincinnati Landing.

Raising the crest and additional material are needed on the Hickory Island Dam.

Material used.

Stone	-----cubic yards--	3, 255. 26
Brush	-----do--	1, 640. 69
Poles	-----number--	1, 028

Total cost, \$4,161.51, or about \$0.83 per cubic yard.

The revetment at Cincinnati Landing, hastily and temporarily put in in 1879, has never been completed, and an attempt was made to do as much as possible before cold weather stopped operations. Most of the work was riprapping simply, but brush was also used.

The old work has been fairly connected, and will now stand.

Material used.

Stone	-----cubic yards--	979
Brush	-----do--	981
Poles	-----number--	271

Total cost, \$1,650.95, or about \$0.845 per cubic yard.

DREDGING OPERATIONS.

The contract for dredging in Quincy Bay was completed early in August by the contractor, H. S. Brown.

During the execution of this contract there have been dredged in Quincy Bay, principally from the bar at the mouth of Whipple Creek, 81,117.14 cubic yards of material at 14 cents per cubic yard, giving a total cost of \$11,504.80. The inspector's salary and the expenses of certain protection work done at the mouth of the creek to restrain its floods, amounted to \$994.75, making \$12,499.55 for the cost of the improvement of Quincy Bay, and covering, within 45 cents, the original allotment for that purpose, made to conform to the clause in the appropriation bill. To the channel cut through the bar the low-water season did no damage, but the high water of the spring completely reformed the bar. No channel is found there now.

HICKORY CHUTE.

It having been reported to me that only 4.2 feet was found on the bar at the foot of Hickory Chute, the dredge, launch, and dumps were sent there from Westport Chute November 22, and the channel was widened and deepened as a temporary relief. Amount dredged, 4,819.44 cubic yards; cost, \$232.46, including only the actual expenses for the actual time.

WYACONDA BAR.

This bar had only 4.5 feet at the lowest stage, and was the most important and difficult question in the district. A wing-dam built above it in 1884, and a closing-dam from the island opposite La Grange to the Illinois shore, built in 1884, below the bar, and a channel dredged through the bar in 1884, did not seem to give a permanent relief.

It was noticed from the surveys, however, made in the fall of 1884, spring and fall of 1885, that the deep curves seemed inclined to work down through the bar so as to give a channel where wanted; and to test it thoroughly the dredge, launch, and dumps were sent there so as to begin work November 2 on the down-river side of the bar. Work was continued without interruption until November 20, when this plant was laid up for the winter. Beginning at a point on the upper end of the cut, where there was a depth of 3 feet below low water, an area was excavated to a depth of 4 feet below low water, about 245 feet wide, and long enough to connect the similar curves above and below the bar. Seven and a half cuts were made, and the average length was about

1,000 feet. Some filling occurred at first, later but little was noticed, and to date it appears to be able to scour out as fast as filled. The set of the current is entirely that way now, the old crossing filling up and this channel has been maintained and is now in use.

Total material dredged, 16,696.06 cubic yards. Average amount dredged per day, 1,077.2 cubic yards.

Total expenses of the plant while engaged upon this work and of the Coal Bluff for towage, \$1,023.79. Average cost per cubic yard excavated, \$0.0613.

In the spring, as soon as the weather would permit, arrangements were made, in accordance with approved plans, for beginning work on the repair of the dam at Oyster Island, opposite La Grange.

A party was sent out to cut brush on Cottonwood Island, March 18. On March 22 barges were towed up to La Grange and left to be loaded with stone, and on the following day three mooring mats were sunk above the break in this dam. The opening was found to be about 80 feet wide on top and worn to a depth of 12 feet below low water. A good apron 120 feet long was put in to begin with, and the gap was then substantially filled up with rock and brush to a height of 5.5 feet above low water, having a width of about 8 feet on top. In addition a sufficient quantity of rock was deposited on the dam formerly built for a distance of about 30 feet out from each end of the place repaired to raise the whole to grade.

The whole was completed March 30, and the fleet returned to Quincy and laid up on account of high water.

Amount of material put in.

Stone	-----cubic yards	1,104
Brush	-----do	711

After this no work of construction was done except the repair of a break 40 feet wide and 22 feet deep, at a 14-foot stage, in the brush-fence dam opposite Quincy. This was done by driving a row of piles 4 feet apart, and arching up stream and around the break; mats of poles were sunk on the up-stream side so as to reach sufficiently high on the piles, then facines were sunk perpendicularly, close together, butt-ends down on the upper side of the pole work; and finally, a mat 70 feet long was sunk close to and at the upper side of the mended gap and for the full length of the new work. A second mat connected this with the piles for a length of 40 feet. The whole was well rocked. Some other weak places in the dam were suitably strengthened.

Total time occupied on the work	-----days	6½
Total distance run by steam-launch	-----miles	78
Total stone in place	-----cubic yards	230¾
Total brush in place	-----do	120½
Total piles driven	-----number	16

Throughout the year the navigable channel has continued good; no detention in navigation has occurred except when and where mentioned in this report.

Financial statement.

Available July 1, 1885	-----	\$86,758 05
Received from sale fuel	-----	78 75
		86,836 80
Expended July 1, 1885, to July 1, 1886	-----	59,007 74
		27,829 06
Balance available July 1, 1886	-----	27,829 06
Balance in Treasury	-----	15,000 00
Balance in hand	-----	12,829 06
		27,829 06

Very respectfully, your obedient servant,

E. H. RUFFNER,
Captain of Engineers.

Col. QUINCY A. GILLMORE,
Corps of Engineers, President Mississippi River Commission.

H. Ex. 30—3

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River, from Des Moines Rapids to the mouth of the Illinois River.

Class of property.	Value.	Class of property.	Value.
1 steamer, "Coal Bluff"	\$13,500	6 dump-boats, at \$810.....	\$4,860
1 launch, "Irene"	1,350	2 quarter-boats, at \$360.....	720
6 model barges, at \$2,430.....	14,580	1 quarter-boat.....	900
3 model barges, at \$900.....	2,700	5 skiffs, at \$15.....	75
1 coal-flat.....	900	Tools and appliances	720
1 flat.....	1,000	Surveying instruments.....	765
5 flats, at \$1,350.....	6,750	Office furniture	180
1 pile-driver and tender	1,440		
1 dredge.....	20,250	Total.....	70,690

APPENDIX D.

REPORT OF MAJOR O. H. ERNST, CORPS OF ENGINEERS, UPON THE IMPROVEMENT OF THE MISSISSIPPI RIVER, BETWEEN THE MOUTHS OF THE ILLINOIS AND OHIO RIVERS.

UNITED STATES ENGINEER'S OFFICE,
Saint Louis, Mo., July 22, 1886.

COLONEL: I have the honor to submit the following report upon the improvement of the Mississippi River between the Illinois and Ohio rivers, for the fiscal year ending June 30, 1886.

At the date of my last report work in the field was suspended; for want of funds little was done during the year. Some extensions and repairs were made at Horsetail, Twin Hollows, east side; Pulltight, Chesley Island, and Jim Smiths.

HORSETAIL.

Work at this place was resumed October 8. All of the old work was in very good condition, with the exception of a small break in hurdle No. 27½, near its outer end. A heavy fill had been made over all the space protected by the hurdles constructed in the spring. The head of Carroll's Island, however, had suffered heavy erosion, leaving the outer end of the hurdle, which formerly connected it with the Illinois shore, exposed. It was necessary to extend this hurdle to a new junction with the island, to repair No. 27½, and to raise the wattling of the new hurdles, which had been left at 8 feet standard gauge, to the full height of the piles. By the 25th of November, when operations were suspended, most of this work had been accomplished.

The Carroll's Island hurdle was extended 2,200 feet, the wattling was carried up to the 8-foot stage upon the new portion, and was completed to the height of the piles upon the portion formerly constructed. Wattling was placed in hurdles 27½, 29½, 31, and 32 to full height except for a short distance, 125 to 150 feet from the outer end of each, where it was left at the 8-foot stage.

All of these new hurdles suffered some damage during the winter and the subsequent high water, but to all except the Carroll's Island hurdle the damages were slight, being limited to the overturning of a few piles at the outer ends. A breach 950 feet long was made in the Carroll's Island hurdle, the piles being fixed in heavy ice and lifted out of position on the rise of over 12 feet, which occurred during the winter. Nothing could be done to repair these damages for want of funds. Over all the reclaimed area at Horsetail, on both sides of the river, the growth of the new banks has continued in a satisfactory manner, the area upon which willows are growing being largely increased.

The least depth of water in the channel reported during the year was 10½ feet.

TWIN HOLLOWES, EAST SIDE.

At two places, near Stations 76 and 81 respectively, where the bank protection had been carried to a height of 8 feet above standard low water, the high water of the previous summer had caused some erosion, getting in behind the mattress work. The protection was partially repaired at these places during October and November, but further work is required near Station 81, which lack of funds has prevented.

PULLTIGHT.

The wattling of the primary hurdle and of secondary hurdle No. 1 was raised from the height 8 feet above standard low water to the height 16 feet above the same plane. The work was begun November 23 and completed November 28.

During the winter and subsequent high water about 850 feet of the primary hurdle

was carried away, and about 15 feet from the outer ends of each Nos. 1, 2, and 4. A large increase has been made to the deposits formerly secured.

The least depth of water in the channel in this vicinity reported during the year was $8\frac{1}{2}$ feet.

CHESLEY ISLAND.

The hurdle constructed in 1883, to close the chute west of the island, had been considerably damaged, and had failed to accomplish its object. A new hurdle, located about 375 feet above the old one, was begun in October and completed early in November, its length being about 670 feet. During the winter a breach about 175 feet long was made near the middle of the hurdle by ice. Except opposite this breach there has been a heavy deposit of solid matter.

JIM SMITH'S.

The large fill caused during the summer by the hurdles which had recently been constructed justified raising the wattling, which was left at 8 feet standard gauge, to the full height of the piles. This was done during October and November. Just above the primary hurdle, where it joins the Illinois shore, the bank was cutting, and required protection. As time and means were both wanting to make that complete, only a temporary protection could be placed. A mattress 300 feet long and 75 feet wide was fabricated, and sunk with its inner edge 8 feet above low-water mark, and some riprap was deposited upon the bank at higher levels.

During the winter and the subsequent high water the hurdles suffered some slight damage, about 5 per cent. being carried away. Very large deposits have been secured.

The least depth of water in the channel in this vicinity reported during the year was 8 feet.

EQUIPMENT.

On Saturday, February 13, the fleet, consisting of 71 pieces, which was in winter harbor in rear of Carroll's Island, about 12 miles from Saint Louis, was torn from its moorings by floating ice and carried down the river. Some of the pieces were sunk and others damaged. The vessels lost were:

Steamer A. A. Humphreys, valued at (after deducting value of machinery and other property saved)	\$12,163 45
Old hull of steamer Anita, valued at	
Hydraulic excavator	6,383 41
Steam launch Florence	650 00
Floating ways for mattresses	1,415 84
Pile driver No. 21	1,562 27
One skiff	16 11
One yawl	30 19
Quarter-boat No. 14	819 00
Quarter-boat No. 6	819 00
Barge No. 10	200 00
Barge No. 23	2,866 69
Five barge flats (old coal barges)	
Piles loaded upon barges 23 and 30 were lost, valued at	3,335 83
And upon the other vessels were lost tools and appliances and boarding outfit, comprising a large number of articles, valued at	1,927 28
The expense of recovering the property and towing it to harbor at White House, including dockage and repairs of three hulls, were	10,435 93
Making the total loss from the disaster of February 13	42,625 03

Approximate value of plant.

Class.	Value.	Class.	Value.
1 steamer, General Gillmore	\$16,592 32	1 ways for mattress	\$1,165 85
27 barges, model. }	66,292 91	Tools and appliances	1,260 99
4 barge flats. }		Photographic apparatus	275 00
19 pile-drivers	26,358 17	Office furniture	625 62
1 machine-shop, floating	1,535 21	Surveying instruments	760 84
2 quarter-boats	1,387 98	Boarding outfit	13,575 89
56 skiffs	668 69		
45 yawls	1,127 21		
115 flats	3,995 85	Total	135,622 53

NAVIGABLE DEPTH BETWEEN SAINT LOUIS AND CAIRO.

The least depth found in the channel between Saint Louis and Cairo, as reported by pilots, was $5\frac{1}{2}$ feet, and was found at Herculaneum. A depth of but $6\frac{1}{2}$ feet was found at Mary River, Devil's Island, Jacket Pattern, Buffalo Island, and Saladin Towhead. The least depth found for the distance of 22 miles below Saint Louis, over which the works of improvement have extended, was 8 feet, and was found at Jim Smith's.

Money statement.

July 1, 1885, amount available.....	\$106,573 91
Miscellaneous receipts.....	56 17
Total.....	<u>106,630 08</u>
July 1, 1886, amount expended during fiscal year, exclusive of outstanding liabilities July 1, 1885.....	65,320 43
July 1, 1886, outstanding liabilities.....	5,141 52
	<u>70,461 95</u>
July 1, 1886, amount available.....	36,168 13

Very respectfully, your obedient servant,

O. H. ERNST,
Major of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, U. S. A.,
President Mississippi River Commission.

APPENDIX E.

REPORT OF CAPTAIN SMITH S. LEACH, CORPS OF ENGINEERS, UPON OPERATIONS IN THE FIRST DISTRICT.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., July 30, 1886.

SIR: I have the honor to submit the following report upon the work of improving Mississippi River, first district, for the fiscal year ending June 30, 1886. The period from July 1, 1885, to December 1, 1885, has already been treated in a supplemental report (see Ex. Doc. No. 38, H. of R., 49th Cong., 1st session), and the descriptive part of this report will begin with the latter date.

The only work done during the period was the repair of a small gap at the junction of Osceola No. 4 and Osceola-Bullerton dikes. This corner projected into the river, and had suffered from the impact of drift. Finally a run of ice, in January, 1886, carried away the wreck and a channel cut through the bar from the angle of the dikes directly toward the head of Bullerton Chute. Anticipating a dangerous increase of the pressure on the Bullerton dikes if this action continued, it was decided to close the gap. The work was done in February and March of the present year. It involved the driving of 75 piles and the placing of 46 riders and braces and a foot mat 65 by 175 feet. Exclusive of the value of materials on hand, the expenditures were \$551.26.

The effects were immediate and substantial. Before the work was finished deposits began, and when the bar was next exposed the depression was entirely obliterated.

All other expenditures were for the care and preservation of the large amount of public property lying idle, and for the performance of routine office work. The floating and other property pertaining to the first and second districts was collected in Bullerton Chute, on the Plum Point Reach, and placed in charge of a force just sufficient to meet the ordinary exigencies of river and weather, and to give an efficient protection from fire. When the conditions were favorable there was a slight excess both of mechanical and manual labor, which was utilized in such repairs to the various boats as were most urgently necessary. The principal item of repairs was the recalking of the bottoms of all the barges and some of the heavier pieces. A substitute for a lifting dock was improvised from boats and materials on hand and 73 pieces were calked at a less expense, including

the construction and operation of the dock, than would have sufficed to merely tow them to the nearest ship-yard and back.

All work was done by hired labor and the purchase of materials in open market, the quantities desired and the circumstances attending their purchase making it more advantageous for the Government to procure them in that way.

The damage to works since December 1, 1885, is as follows:

A run of heavy ice January 11-18 injured the central portion of the Gold Dust main dike. Early in February a second run of ice inflicted similar damage upon the lower part of this dike. The piles of the front row were cut off at the ice level. At first the riders and braces remained in position, but they have gradually broken down, until now the dike has no resisting power above the 15-foot plane. The stumps of the piles are in place and they hold the foot-mats securely. None of the deposits heretofore secured by this dike are as yet jeopardized, nor will future results be appreciably influenced by the damage done to it.

The nature of the injuries indicate that they were made possible by the rotten cottonwood piles. If the material had been newer or better the damage would have been much less. The first of these runs of ice carried away the corner of the Osceola No. 4 and Osceola-Bullerton dikes, which was repaired as above stated.

Early in the month of April, with the river at an overflow stage, Osceola Cross-dike No. 3 broke in three places. The large accumulation of drift held above No. 3 was liberated and went down the chute against No. 4. The latter broke shortly after at one place near the middle. The break in No. 4 again freed a large mass of drift, which went down Bullerton Chute and was received by Bullerton No. 2 without damage.

Soundings taken in the breaks showed no scour, and the fall of the river disclosed the significant fact that both dikes had given way by the piles breaking off at about the 20-foot stage of the river. The damage was confined to the upper part of the dikes. The lower parts remain intact and have thus far held the masses of sand-embedded drift in place and have prevented the deposits heretofore obtained in Osceola Chute from being scoured out.

The break in Osceola No. 4 has not materially enlarged, but the detached portions of No. 3 left by the three breaks have been gradually wrecked, until at present but a few fragments of that dike remain.

So far as present indications may be relied upon, the closure of this chute has not been jeopardized by the damage done to the dikes.

The manner in which all these dikes broke, as above described, shows conclusively that the failure was not due to any unusual pressure, error in location, or defect of original construction, but simply that the material of which they were built, cottonwood, had lived its life-time and could stand no longer. It is well known that other material can be obtained at but little increase of cost which has a life of four or five times that of cottonwood. No dikes of standard construction have failed except from the weakening of the piles by decay, so it may be concluded that the life of the dike will be exactly that of the materials composing it. An evident corollary is, that, within reasonable limits of expense, none but the most durable woods should be used in their construction. A minor point also suggests itself, that since the decay is most rapid at the 20-foot stage, or thereabout, the life of a dike might be slightly prolonged by providing an intermediate support to the piles at about that elevation.

The work for bank protection has suffered but little damage. There has been a loss of about 500 feet of the middle section of the Fletcher's revetment, aside from which the entire line is in as perfect condition as when it was built. Considerable growths of willows have been secured on the upper portions, giving them even more resisting power than when new. The loss above mentioned is less than the most sanguine expectations of two years ago. It occurred only after the caving of the unprotected bank above and below had progressed so far that the ends of this isolated work were actually attacked from the rear. In fact the remarkable and wholly unexpected endurance of this work must cause some modification of the view previously held as to bank revetment, viz, that continuity is essential. It now seems fairly probable that banks of ordinary difficulty, if undertaken when *not rapidly* caving, can be effectually protected by discontinuous work, at a great saving of cost.

The effects of the works during the past year, though mainly conservative, have been beneficial.

The Gold Dust dikes were at last report so much out of repair that they were scarcely expected to hold the deposits already secured, much less to increase them. They have nevertheless induced deposits in the area controlled by them, but at an exceedingly slow rate. Nothing has occurred to modify the opinion, previously expressed, as to the inability of the dikes of this system to accomplish their ultimate purpose. But little increase of deposits can be detected in Osceola Chute. Bullerton Chute has filled at a fair rate above Cross-dike No. 1, less rapidly between No. 1 and No. 2, and very slowly and

with exceedingly soft material below the latter. The Plum Point dikes have secured extensive deposits both within and below them, though their efficiency has doubtless been impaired by the breaks in Nos. 5 and 6.

The revetments have secured a practical stability of bank lines from Gold Dust to the foot of Bullerton towhead, accompanied by an unprecedented stability of channel line and a corresponding excellence of channel. That this latter phenomenon is in some degree the effect of the former cannot be doubted.

Since my last report (November 30, 1885) no change of importance has occurred in the lines of the channel in the portion of the river under improvement. The channel early in the year divided on the small tow-head near the foot of Island 30, and as a consequence the shoalest water was to be found at that point. The tow-head was caving rapidly on both sides, and during the flood disappeared entirely. Latterly about the same water has been found at this point as on the Plum Point crossing below. This latter crossing is the one place on the reach where the river may be fairly said to be under control of the works, and its history is for that reason important.

Observations of depth and velocity in the various channels on the reach have been made at frequent intervals, and the results are appended in tabulated form. Especial attention is invited to the depths in the "Lower Plum Point crossing," which show that the low-water channel at that point did not fill up during any of the rises, a state of affairs, it may be safely asserted, which did not prevail at any shoal crossing on the river outside of the reaches under improvement. During all the rises culminating in a flood since this channel first opened, just a year ago, the river has not left it at any stage. The scouring effect of the high stages has been confined to the low-water channel, which, instead of filling up, as is the case in the unimproved river, has been left by each rise equally deep, and wider and straighter than it found it.

Shortly after taking charge of this district I began the preparation, for my own information and use, of a tabular exhibit of the results of all surveys made from the beginning of the work to the close of operations in January, 1885. This table, which was completed in midsummer of last year, was thought by a member of the commission to be of sufficient interest to be inserted in an annual report, and at his suggestion it is appended hereto. A complete explanation accompanies the table.

The following financial statement and general balance-sheet show the present condition of appropriations for this district:

Appropriation for improving Mississippi River (act of July 5, 1884).

FIRST DISTRICT.

Balance on hand November 30, 1885, as per last report, including estimated liabilities.....		\$18,755 84
Expended from December 1, 1885, to June 30, 1886.....	\$17,215 28	
Estimated liabilities to June 30, 1886.....	1,540 56	
		<u>18,755 84</u>

Improving Mississippi River, first district, Plum Point Reach.

DR.			CR.		
1885. Nov. 30	To liabilities.....	\$2,510 00	1886. June 30	By amount expended from Nov. 30, 1885, to date.....	\$17,215 28
	To balance.....	16,245 84		By estimated liabilities.....	1,540 56
		<u>18,755 84</u>			<u>18,755 84</u>

A table of the present value of plant is appended.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers

General Q. A. GILLMORE,
President Mississippi River Commission, New York, N. Y.:

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River.—First District.

Class of property.	No.	Approx. value, June 30, 1886.
Steamer P. Kirns.....	1	\$6 215
Steamer Itasca.....	1	6 894
Steamer Abbot.....	1	3 976
Launch Titania.....	1	899
Pile-drivers.....	37	99,098
Quarter boats.....	15	20,563
Mattress boats.....	10	22,318
Graders.....	2	31,051
Derrick boats.....	2	4,447
Barges.....	51	39,497
Machine shop boat.....	1	4,242
Whitehall boats.....	7	196
Skiffs.....	60	583
Tools and appliances.....		8,000
Office furniture.....		80
Surveying instruments.....		200
Total value.....		248,259

Table showing comparative least channel-depths and velocities in various channels of the improved portion of Plum Point Reach, Mississippi River.

Localities.		First group.						Second group.							
		Lower Plum Point Crossing.		Buller-ton Channel.		Buller-ton Chute.		Lynch's		Island 30 Channel.		Elmot Chute.		Island 30 Chute.	
Date.	Gauge.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.
1885.															
Dec.	16	9.40	.....	5.03	8.0	.....	.....	9.0	.....	18.0	.....	.....	.....	.....	.....
	26	14.60	21.5	4.66	12.5	3.46	.....	1.10	14.0	.....	22.5	4.50	.....	.....	.....
	30	11.35	19.0	4.83	10.0	3.05	.....	.77	10.0	.....	19.5	4.41	.....	.....	.....
1886.															
Jan.	2	11.00	19.5	4.66	9.0	3.38	.....	.85	.....	19.5	4.29	.....	.....	.....	.....
	6	13.30	23.0	4.50	13.0	3.79	.....	.98	16.0	.....	22.0	3.96	.....	3.46	.....
	20	16.40	25.0	4.21	15.0	3.67	.....	1.23	.....	24.0	4.62	.....	.....	.....	.....
	28	18.40	25.5	4.79	18.0	4.04	.....	1.39	.....	25.5	4.75	.....	.....	.....	3.54
Feb.	24	28.30	.....	.....	29.0	4.12	.....	1.18	.....	38.5	4.62	.....	4.41	.....	5.12
	26	28.10	39.0	4.87	.....	.....	.....	27.0	.....	.....	.....	.....	.....	.....	.....
Mar.	3	25.00	35.0	4.62	24.0	4.21	.....	1.10	.....	34.0	5.12	.....	4.00	.....	4.46
	6	22.70	.....	.....	25.0	4.00	.....	1.10	24.0	.....	32.0	5.32	.....	.....	.....
	12	17.70	27.0	4.62	19.0	3.63	.....	.90	.....	28.0	5.41	.....	3.46	9.0	3.63
	17	13.55	24.0	4.66	14.5	3.83	.....	.73	12.5	.....	23.0	4.79	.....	3.67	2.68
	23	12.35	19.0	4.83	13.5	3.87	.....	.85	9.5	.....	19.0	4.46	.....	.....	.....
	31	24.55	35.0	4.87	24.0	4.16	.....	1.02	18.0	.....	26.0	5.16	.....	.....	.....
Apr.	5	28.90	33.0	.....	30.0	.....	.....	29.0	.....	33.0	.....	.....	.....	15.0	.....
	9	30.85	35.0	4.75	33.0	3.75	.....	1.39	18.0	.....	34.5	5.65	.....	4.75	5.41
	15	32.75	.....	.....	31.0	3.63	.....	1.56	.....	.....	.....	.....	.....	.....	.....
	16	32.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.70
	20	33.30	40.0	4.91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	25	33.10	37.0	4.83	27.5	4.00	.....	2.22	.....	.....	.....	.....	.....	.....	.....
	28	32.35	36.5	4.95	.....	.....	.....	1.93	.....	.....	4.91	.....	4.83	.....	4.29
May	3	24.80	30.0	4.95	25.5	3.50	.....	1.18	24.5	.....	33.0	4.79	.....	3.88	3.79
	6	18.80	27.0	5.08	21.0	3.71	.....	.98	19.0	.....	27.0	5.12	.....	.....	.....
	12	20.50	28.0	5.82	23.0	3.46	.....	.98	.....	29.5	4.17	.....	4.91	.....	3.79
	15	23.75	31.0	5.28	24.5	3.46	.....	1.60	24.0	.....	30.0	4.75	.....	4.04	4.70
	19	27.00	.....	.....	27.0	4.08	.....	1.39	.....	.....	.....	.....	.....	.....	.....
	22	27.40	33.0	5.61	30.0	3.71	.....	1.68	28.0	.....	34.0	4.66	.....	4.41	5.03
	26	25.50	33.0	5.12	27.0	3.79	.....	1.56	27.0	.....	32.0	4.91	.....	5.03	4.83
	28	22.85	30.0	4.91	23.0	3.54	.....	1.43	22.0	.....	29.5	4.70	.....	4.17	11.5
June	1	19.20	28.0	5.33	20.0	3.34	.....	.98	19.5	.....	27.0	4.79	.....	3.42	3.17
	5	14.80	23.0	5.16	15.0	3.05	.....	.73	15.0	.....	23.0	4.99	.....	3.79	2.39
	9	12.80	20.0	.....	14.0	.....	.....	.....	12.0	.....	20.0	.....	.....	.....	.....
	11	12.20	19.0	.....	14.0	.....	.....	.....	13.0	.....	21.0	.....	.....	.....	.....
	16	13.40	22.0	5.70	17.0	2.92	.....	.65	15.5	.....	21.5	5.00	.....	.....	.....
	18	14.25	22.5	5.00	18.0	2.92	.....	.65	16.0	.....	20.0	4.91	.....	3.17	1.72
	23	16.50	24.5	5.45	17.0	3.04	.....	.85	17.0	.....	23.0	5.66	.....	3.21	3.00
	28	16.75	25.0	5.24	16.5	3.00	.....	.77	17.5	.....	22.5	5.24	.....	3.17	3.46

NOTES.—The depths reported are the least found in the line of deepest water, or those which limited navigation for the time being. The velocities were measured on the same line and near the shoalest point. They were all taken with the current meter running at depth of 5 feet below the surface. They are individual velocities, taken to ascertain the relative draft of water in the different channels, and are useful for that purpose only. They have no relation to the average velocity or discharge.

The crossings forming group 1 of the table may be considered as competitors for the channel over Bullerton Bar. The third, Bullerton Chute, was completely closed by works; the second, Bullerton Channel, has remained partly obstructed by the diverting action of the works favoring the first channel, which latter has remained good by reason of carrying the water diverted from the other two.

The four channels of the second group are also competitors, of which the third and fourth have been restricted in discharge by the Gold Dust dikes, and the first by the directive action of the Fletcher's revetment. The second, Island 30, has carried the bulk of the water and has remained good.

Bullerton Area, Range 47-58.

Date.	Stage of river.	Location.	Mean smooth bottom.		Shoalest channel depth at prevailing stage.	
			Referred to low water, 1879.	Above 10 ft. below low water, 1879.	Feet.	Location.
1881. Oct. and Nov.	23.8	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-8.30 .34 6.78 .70	18.30 9.66 3.22 9.30	36.8	Range 50.
1883. Jan. 11.....	6.0	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-5.47 9.99 3.56 2.70	15.47 .01 6.44 7.30	21.0	Between ranges 48 and 49
March 23.....	17.4	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-5.69 5.66 3.40 1.64	15.69 4.34 6.60 8.36	22.4 21.0	Break in O.-B. dike. Range 50.
Aug. 4 to 10....	13.3	Site of Plum Point dikes..... Site of Osceola dikes..... Open River..... Total area.....	-4.33 5.52 2.86 1.59	14.33 4.48 7.14 8.41	15.4	Range 49.
Aug. 27 to Sep. 3.	7.0	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-4.60 6.22 2.22 1.29	14.60 3.78 7.78 8.71	19.0	Range 49.
Oct. 15 to 23....	4.4	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-4.62 5.45 3.34 1.75	14.62 4.55 6.66 8.25	20.0	Range 49.
1884. April 8 to 15..	29.0	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-5.79 2.16 .94 -0.39	15.79 7.84 9.06 10.39	31.0	Range 50-51.
May 19 to 22..	20.7	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-4.01 3.31 .66 .53	14.01 6.69 9.34 9.47	21.7	Range 50-51.
July 30 to Aug. 4	10.0	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-5.97 1.61 3.98 .95	15.97 8.39 6.02 9.05	26.0 11.0	Break in O.-B. dike. Range 50-51.
Sept. 9 to 13....	4.9	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-5.41 2.49 3.98 1.27	15.41 7.51 6.02 8.73	13.0	Range 50-51.
Nov. 14 to 22....	4.0	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-5.67 1.97 5.67 1.91	15.67 8.03 4.33 8.09	14.0	Range 50-51.
1885. Jan. 20 to 29....	.....	Site of Plum Point dikes..... Site of Osceola dikes..... Open river..... Total area.....	-7.40 1.57 7.95 2.83	17.40 8.43 2.05 7.17	32.0	Range 51.

NOTES.—The figures preceded by a minus sign indicate elevations above a plane corresponding to low water of 1879.

"Mean smooth bottom" means the elevation of the bottom which would result if it were leveled up in such manner as to make the cuts equalize the fills. The areas remaining sensibly constant, this quantity is a good measure of the relative amount of scour or fill at any place at different epochs.

The site of Gold Dust and Plum Point dikes includes the whole area controlled by them, being all the bed of the river between the natural bank and the east line of the proposed regulated channel.

The site of Osceola dikes includes all areas between the natural bank and the west line of corrected channel.

"Open river" is the proposed corrected channel of 3,500 feet width

Gold Dust Area, Range 27-33.

Date.	Stage of river.	Location.	Mean smooth bottom.		Shoalest channel depth at prevailing stage.	
			Referred to low water, 1879.	Above 10 ft. below low water, 1879.	Feet.	Location.
1881. Oct. and Nov.	14.5	Site of Gold Dust Dike.....	-3.70	13.70	29.0	Foot Ashport Bar. Range 29.
		Open river.....	5.36	4.64		
		Total area.....	2.23	7.77		
1882. April 22 to 27..	22.0	Site of Gold Dust Dike.....	-4.30	14.30	34.0	Range 28.
		Open river.....	4.07	5.93		
		Total area.....	0.82	9.18		
Dec. 18.....	3.3	Site of Gold Dust Dike.....	-4.29	14.29	16.0	Range 28.
		Open river.....	6.88	3.12		
		Total area.....	2.51	7.49		
1883. April 1.....	15.5	Site of Gold Dust Dike.....	-4.18	14.18	30.5	Range 28.
		Open river.....	6.16	3.84		
		Total area.....	2.23	7.77		
July 21 to 25...	18.2	Site of Gold Dust Dike.....	-5.02	15.02	33.7	Range 29-30.
		Open river.....	6.60	3.40		
		Total area.....	1.97	8.03		
Sept. 19 to Oct. 8.	1.0	Site of Gold Dust Dike.....	-6.14	16.14	12.0	Range 28.
		Open river.....	5.23	4.77		
		Total area.....	.78	9.22		
1884. April 23.....	26.2	Site of Gold Dust Dike.....	-5.89	15.89	35.2	Range 29-30.
		Open river.....	8.49	1.51		
		Total area.....	2.57	7.43		
Sept. 22 to Oct. 1.	4.5	Site of Gold Dust Dike.....	-7.66	17.66	11.0	Range 28-29.
		Open river.....	7.90	2.10		
		Total area.....	1.64	8.36		

Craighead Point Area, Range 66-71.

Date.	Stage of river.	Location.	Mean smooth bottom.		Shoalest channel depth at prevailing stage.	
			Referred to low water, 1879.	Above 10 ft. below low water, 1879.	Feet.	Location.
1881.						
Nov.....	15.0	Total area.....	7.85	2.15	38.5	Range 70.
1883.						
Jan. 15.....	6.5	do.....	8.20	1.80	41.0	Range 66.
May 1.....	28.1	do.....	9.40	.60	53.6	Range 67.
Aug. 13.....	12.5	do.....	6.97	3.13	40.0	Range 67.
Oct. 25.....	5.3	do.....	6.97	3.13	31.3	Range 67.
1884.						
June 12.....	15.5	do.....	8.53	1.47	32.0	Range 67-68.
Nov 19.....	4.4	do.....	7.90	2.10	22.0	Range 68-69.

Ashport Bar-Island 30 Area, Range 27-42.

1881.						
Oct. and Nov.	14.5	Site of Gold Dust Dike.....	-2.62	12.62	36.5	Range 37.
		Open river.....	7.99	2.01		
		Total area.....	3.57	6.43		
1882.						
April 27 to 30.	22.0	Site of Gold Dust Dike.....	-4.44	14.44	45.0	Range 39-40.
		Open river.....	6.85	3.15		
		Total area.....	2.15	7.85		
1884.						
Sept. 1 to Nov. 5.	8.5	Site of Gold Dust Dike.....	-6.14	16.14	18.0	Range 39.
		Open river.....	7.72	2.28		
		Total area.....	2.10	7.90		

Osceola Chute, Range 40-49.

1881.						
Oct. and Nov.	14.5	Total area.....	-6.38	16.38		
1884.						
Nov. 1 to 5.....	8.5	do.....	-9.00	19.00		

APPENDIX F.

REPORT OF CAPTAIN SMITH S. LEACH, CORPS OF ENGINEERS, UPON OPERATIONS IN THE SECOND DISTRICT.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., July 30, 1886.

SIR: I have the honor to submit the following report upon the work of improving Mississippi River, second district, for the fiscal year ending June 30, 1886:

Aside from the ordinary care and necessary repairs of property and routine office duties, the only work done in the second district during the fiscal year has been the repair of the most serious fault in the Hopefield revetment and the reballasting with stone of some portions of that, and of the Memphis revetment, which were originally sunk with sacks of gravel. The work of repairing this fault, known as No. 4, the beginning of which was noted in my report of November 30, 1885, was completed in the early part of January, 1886. It comprised the complete renewal of the work for a distance of 1,140 feet, and the patching of a small break which occurred in October, 1885, immediately above the large one.

The general plan of work was identical with that heretofore followed, comprising a continuous hurdle mat 150 feet wide, sunk below low water, a continuous upper bank revetment extending from the water surface to the top of the bank, with the interme-

diate zone of varying width covered by "connecting mats," discontinuous in structure, but firmly joined to the upper work and to each other, and lapping well onto the subaqueous mat.

In construction especial attention was given to the internal strength of all the work, to secure junctions among the several parts, and with the old work above and below, and to anchoring to the bank both the subaqueous and shore revetments. As the defects in the present work in this locality have resulted mainly from a tendency of the upper revetment to slide down the bank, the latter point (anchorage) was especially considered, and with a view of increasing the range of this experiment, as also in the hope of greater security, anchor cables were run out from the old work below No. 4.

An experiment in drainage was contemplated, and directions given for the construction of a drain. The drain was begun at any early stage of the proceedings, but its completion was deferred until the river had risen several feet from the lowest stage. It was then hastily finished, but in such shape that it cannot fairly be credited with any good results which may follow, or charged with any bad ones.

No important changes were made in the methods of administration. The late date at which the work was authorized left no time for advertising, for which reason purchases of materials and supplies were made in open market, except the stone, which, not being required until near the close of operations, was obtained on requisition from the secretary of the committee on construction.

The 1,140 lineal feet of bank in fault No. 4 were completely revetted at a total cost of \$16.60 per foot. Several causes operated to increase this cost, among them the small amount of work to be done, the necessity of bringing plant from Plum Point and returning it; the serrated outline of the bank, requiring in the pockets nearly double the ordinary amount of shore work, and the fastenings to the old work above and below, which were tedious and expensive operations.

This revetment, for which \$16.60 per foot of bank may be taken as a liberal estimate, needs only the addition of 25 feet width to the subaqueous mat (175 feet instead of 150 feet), to become what, in the light of present experience, I would recommend as a standard for localities of ordinary importance in this part of the river. The addition of 25 feet would mean an increase of $16\frac{2}{3}$ per cent. in the cost of subaqueous work, which is now 49 per cent. of the whole. It seems safe, therefore, to estimate such work at \$18 per foot for the future.

The reballasting required 3,000 yards of rock, of which 280 yards were placed in the Memphis revetment, immediately below Wolf River, and the remainder on the Hopefield work, below fault No. 4. A classified statement of expenditures for this work is herewith.

It was thought that with No. 4 repaired no apprehension need be felt for the safety of this work during the succeeding high water. This prediction has been fully verified, since all the rest of the work is to-day in practically the same condition as it was a year ago. The lowest fault near the end of the work has enlarged slightly, but has not caved back, and there has been a loss of a few feet at the extreme end, due to caving working up from below.

The Memphis revetment is in perfect condition; but its completion to the end of the paved levee is of the greatest importance.

The changes in the harbor of Memphis have been marked and beneficial. The corner of the sand-bar, which extended out from Hopefield Point, and around which the river made a very abrupt turn, has entirely cut away, as intimated in last report. The river now follows a more gradual curve, striking the Memphis front less squarely. The engorged section is now at the foot of Beale street. Memphis Harbor, above the Elevator, is now comparatively slack water, and some filling is taking place. These changes are entirely in the direction contemplated by the Commission when the plan for this improvement was adopted four years ago.

Two small breaks are reported to have occurred in the Long Lake Levee in this district during the last flood. No funds have been available for an examination of them.

The following financial statement and general balance-sheet show the present condition of appropriations for this district:

Appropriation for improving Mississippi River (act of July 5, 1884).

SECOND DISTRICT.

Balance on hand November 30, 1885, as per last report, including estimated liabilities		\$29,787 93
Expended from December 1, 1885, to June 30, 1886	\$22,760 97	
Estimated liabilities to June 30, 1886	1,772 39	
		24,533 36
Balance June 30, 1886		5,254 57

Improving Mississippi River, Second District, Memphis Reach and Harbor.

Dr.			Cr.		
1885. Nov. 30	To liabilities.....	\$6,388 57	1886. June 30	By amount expended from November 30, 1885, to date..	\$22,760 97
	To balance.....	23,399 36		By estimated liabilities.....	1,772 39
				By balance.....	5,254 57
		29,787 93			29,787 93

A table showing present value of plant is appended.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers.

General Q. A. GILLMORE,
President Mississippi River Commission, New York, N. Y.

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River, Second District.]

Class of property.	No.	Approx. value, June 30, 1886.
Steamer H. M. Graham	1	\$3,720
Launch Daphne	1	1,104
Flat-boats.....	3	745
Mattress-boats.....	2	6,624
Machine-shop boat.....	1	4,693
Screen-boats.....	4	3,312
Quarter-boats.....	4	5,013
Survey-boat.....	1	624
Barges	23	23,974
Skiffs.....	15	204
Pile drivers	9	22,890
Coal shells	2	331
Tools and appliances.....		4,000
Office furniture.....		120
Surveying instruments.....		150
Total value.....		77,504

Memphis Reach and Harbor. Statement of expenses for work done from November 1, 1885, to January 7, 1886.

HOPEFIELD BEND.																		
Revetment.																		
Item.	Designation.	Admin-istration.	General ex-pense.		General repairs.	Sub-aqueous mattress.		Clearing bank.	Upper-bank protection.				Total upper-bank protection.		Total revetment.			
			Amt.	Cost.		Amt.	Cost.		Cost.	Hydraulic grading.		Hand-grading.	Bank mattress.		Amt.	Cost.	Amt.	Cost.
										Amt.	Cost.		Amt.	Cost.				
Pay-roll		\$473 00		\$637 78	\$136 00		\$2,539 92	\$60 37		\$348 54	\$208 73		\$1,376 64		\$1,994 28		\$4,534 20	
Subsistence:																		
Services		11 81		48 51	6 54		180 30	4 83		18 78	17 51		75 75		116 87		297 17	
Stores		43 22		178 15	25 35		768 98	19 01		74 70	66 02		362 40		522 13		1,291 11	
Brush							2,255 95						1,114		1,371 55		3,627 50	
Poles	Cords						1,818						80		135 83		251 1/2	
Stone	Cords						171 1/2						882		882 00		2,502 00	
Iron	Cu. yds						1,620						1,822		57 43		10,462	
Wire	Lbs						8,640						11,260		435 42		35,570	
Wire rope	Lbs						24,310										4,825	
Spikes and nails	Feet						4,825						64 80		64 80		230 00	
Coal	Lbs		217 1/2	21 75			165 20			89 25					89 25		89 25	
Hire of tugs	Bush			37 50			35 00										35 00	
Miscellaneous				71 78						1 75					1 75		1 75	
Totals		528 03		995 47	242 01		9,279 85	84 21		533 02	292 26		4,761 82		5,671 31		14,951 16	
Percentage of cost		2.79		5.27	1.28		49.00	0.45		2.82	1.54		25.15		29.96		78.95	
Work done.....																		
Cost per unit.....																		
1,628 squares continuous mattress.																		
1,185 squares connecting mattress.																		
2,408 squares bank covered.																		
\$3.85 per square covered																		
1,140 lineal feet.																		
12,201 cubic yds.																		
\$0.0453 per cubic yard.																		
1,764 cubic yds.																		
\$0.1657 per cubic yd.																		
Total cost of grading, \$825.28, or \$0.724 per lineal foot, or \$0.0591 per cubic yard.																		

Memphis Reach and Harbor. Statement of expenses for work done from November 1, 1885, to January 7, 1886—Continued.

Item.	Designa- tion.	HOPEFIELD BEND—continued.						Memphis Harbor, ballasting shore work.		Salvage work on sunken barge.		Hopefield Bend, ballasting old revetment.		Grand total.	
		Steamer H. M. Graham.		Total, Hopefield Bend.		Per cent of cost.									
		Amount.	Cost.	Amount.	Cost.		Amount.	Cost.	Amount.	Cost.	Amount.	Cost.			
Pay-roll.....			\$1,046 84		\$6,827 82	36.07		\$57 68	\$231 50		\$355 00			\$7,472 00	
Subsistence:															
Services.....															
Stores.....			142 84		506 87	2.68			12 38		42 75			562 00	
Brush.....			166 78		1,704 61	9.00			60 83		121 39			1,886 83	
Poles.....				2,932	3,627 50	19.16						2,932		3,627 50	
Stone.....				251½	427 00	2.25						251½		427 00	
Iron.....				2,502	2,502 00	13.22	280	280 00		974	974 00	3,756		3,756 00	
Wire.....				10,462	351 19	1.85						10,462		351 19	
Wire rope.....				35,570	1,359 93	7.18				1,650	451 44	47,220		1,811 37	
Spikes and nails.....				4,825	205 06	1.08						4,825		205 06	
Coal.....		7,275	750 25	8,385	230 00	1.22						7,500		230 00	
Hire of tugs.....					861 25	4.56						8,385		861 25	
Miscellaneous.....			108 95		72 50	0.38			20 00					92 50	
Total.....					256 60	1.35			84 00					340 00	
Percentage of cost			2,215 66		18,932 33	100.00		337 68	408 71		1,944 58			21,623 30	
			11.71		100.00										
		Work done .. }		3,613 squares built.											
		Cost per unit.. }		3,208 squares covered.											
				\$5.90 per sq. covered.											

NOTE.—Administration includes services of assistant engineer and clerical force.

General expense includes watching and caring for fleet, property, and supplies, coaling steamboats, and all other unitemized expenses.

General repairs includes all repairs to plant and property.

APPENDIX G.

REPORT OF CAPTAIN WILLIAM T. ROSSELL, CORPS OF ENGINEERS, UPON OPERATIONS
IN THE THIRD DISTRICT.UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., July 26, 1886.

COLONEL: I have the honor to inclose herewith report on third district, Improving Mississippi River, for the fiscal year ending June 30, 1886.

Very respectfully, your obedient servant,

WM. T. ROSSELL,
*Captain of Engineers.*Col. Q. A. GILLMORE,
Corps of Engineers, President Mississippi River Commission.

REPORT.

During the past fiscal year the third district, Improving Mississippi River, was in charge of Capt. Clinton B. Sears, Corps of Engineers, until May 14, 1886. On this day he was relieved by Capt. William T. Rossell, Corps of Engineers, by virtue of S. O. No. 89, Par. 2, Headquarters of the Army A. G. O., Washington, April 16, 1886.

I.—LAKE PROVIDENCE REACH.

This reach is thus described. It extends from Carolina Landing, 517 miles below Cairo, to the foot of island No. 95, a distance of 35 miles.

For an account of the physical character of this reach the proposed improvement and work done previous to June 30, 1885, reference should be made to the reports of the Mississippi River Commission for past years.

During the fiscal year ending June 30, 1886, all the work done, except care of public property, has been repairs to the baleshed system of dikes and the building of an additional dike across the chute on range 66, the whole work consisting in closing the gaps left in Stack Island cross dike and in dike No. 11 the previous season; building a new dike across the chute on range 66, and extending the dike on range 69 across the chute to the bar on the Mississippi shore.

Dike No. 10, on range 66, was constructed of four rows of piles securely braced, with a heavy footmat sunk between the rows of piling. Dikes 11 and 13, on ranges 67 and 69, were of two rows of piles braced, but without footmat.

The repairs to the Stack Island cross-dike were made by re-enforcing the ends with three rows of piles and driving three rows across the gap in front of the dike, the whole well braced and a heavy footmat sunk across the gap.

These repairs were begun November 17, 1885, and finished January 11, 1886. The amount of the allotment was \$13,500, and the amount expended \$12,881.34. The small amount of work done was due entirely to lack of funds. The methods used were those heretofore described.

CONDITION OF WORKS.

Duncunsby system of dikes.—This system has nearly disappeared, only portions of cross dikes 6, 7, and 8 remaining. They have, however, served the purpose for which they were constructed, viz: reducing the volume of water through Skipwith chute, and thereby preventing its enlargement. The contraction has caused an increase of channel depth here.

Cottonwood system of dikes.—This system remained in good condition until April, 1886. Early in this month the longitudinal dike was broken by a raft or barge, and these breaks have since enlarged, and about 300 feet of cross dike No. 3 has washed away.

This system has caused the bar below to increase both in length and height, concentrating the water and fixing the channel near Mayersville Island.

Mayersville system of dikes.—During the last high water a large amount of drift collected in front of the Mayersville cross-dike, and finally broke the piles at about the 20-foot stage. There remain, however, large quantities of drift embedded in the sand in front of the dike and extending across the chute.

The Mayersville system of dikes has caused a general shoaling the entire length of the chute.

Baleshed system of dikes.—The gap in the main dike between range 64 and range 66 has increased about 500 feet, due to the breaking of the piles during the last high water. The drift lodged in front of Stack Island. The cross-dikes 10, 11, and 13 were successively broken by the drift during the high water. This system of dikes, together with the Stack Island dikes, have perfectly served their purpose, changing the channel from behind the island and preserving a good, navigable channel at this place.

Stack Island system of dikes.—This system is in good condition, and has suffered no damage. Its admirable effect is seen in the filling up of the chute behind the island.

Pilcher's Point revetment.—This revetment was never finished, but a portion of the caving bank slipped, and in the report for 1885 it was estimated that 30 per cent. of the revetment work had disappeared. These breaks, or slips, took place at irregular intervals, and were of varying sizes. During the past year gradual slipping has taken place, and but a small portion of the revetment work can be seen in place—probably about 25 per cent. This is in small and detached pieces of 300 feet in length down, except at the upper end where about 1,500 feet is still in place.

In spite of this apparent loss, the result obtained has been satisfactory. Where the revetment was built the bank, in its general line, is very nearly where it was at the completion of the work.

Mayersville Island revetment.—The head of this island has continued to cut away under the direct action of the current until it is now opposite the Mayersville cross-dike. Nearly the entire revetment has been washed away. I cannot state that any result whatever is directly attributable to the Mayersville Island revetment.

FINANCIAL STATEMENT.

Lake Providence Reach.

Available balance June 30, 1885	\$22,070 45
Received from sale of fuel, and deposits	83 75
Transferred from Yazoo Front	144 17
Transferred from general service	29,215 04
Total	51,513 41
Expended during year	\$43,516 56
Transferred to levees, Tensas Front	2,000 00
	45,516 56
Balance June 30, 1886	5,996 85
Expended:	
For services	30,054 79
Material, supplies, and outfit	3,528 47
Subsistence	2,808 82
Plant and repairs to same	178 55
Fuel	2,355 38
Retained percentage paid on previous contract deliveries for material	194 11
Retained percentage paid on previous contract deliveries for subsistence	1,458 10
	1,652 21
Miscellaneous—Includes office expenses (except services) mileage, telegrams, medicines and medical services, transportation and traveling expenses	2,938 34
Total	43,516 56

The original condition of the channel along this reach was bad. The channel was flat, badly defined, and often, in extreme low water, only five feet deep. The original project for improvement was the narrowing of the water way to 3,000 feet by closing the chutes and creating artificial banks through depositions, and the preservation of the natural curves of the river by revetting the caving banks. No important changes have been made in the general plan.

To June 30, 1886, the total amount expended on the reach was \$2,217,643.67. The results are shown in the table inclosed, giving depths of water over the three shallow crossings of the reach for 1884, '85, and '86. Previous to work the depths found were often as little as 5 feet.

The least depths in 1884:

	Feet.
Stack Island Crossing, Aug. 30	10
Ben Lomond Crossing, September 20 and 30	11
Least depths in 1885:	
Duncansby Crossing, Oct. 20 and 30	18
Stack Island, July 30, Aug. 10, Oct. 10 and 20	14
Ben Lomond Crossing, Oct. 30	13

The low water stage of 1886 has not yet been reached, and up to the present no less depth than 20 feet has been found on any of the crossings. The results then show that the improvement on this reach has been successful.

During the past fiscal year the extreme oscillation has been 32.37 feet. Lowest water, October 26, 1885, 5.54, Lake Providence gauge; highest water, May 7, 1886, 37.91, Lake Providence gauge.

II.—VICKSBURG HARBOR.

The work here consists of the improvement of the harbor proper (Centennial Lake, in front of the town), and the maintenance of Delta Point, opposite Vicksburg. The former is entirely local in character, and would add nothing to the general improvement of the river.

An examination of the basin dredged in front of the city of Vicksburg, and the canal leading thereto, was made in January, 1886, by Assistant Engineer Coppée. It was found that the average level of the bottom of the basin was plus 5 feet of the gauge for a width of about 300 feet, and in the canal plus 7½ feet. The basin was dredged in 1883 to the zero of the gauge for a width of 160 feet, and to plus 5 feet of the gauge for a width of 160 feet. The canal was dredged to the zero of the gauge for a width of 80 feet.

Examination shows, then, that the average fill in the basin to January, 1886, was only 2½ feet, and in the canal 7½ feet. Dredging the basin may be regarded as permanent, or as requiring work only at long intervals, but to keep the canal open will require yearly work.

The holding of Delta Point is deemed essential to prevent further recession of the river from Vicksburg and to maintain the regimen of the river immediately below. This has been held by mattress and riprap revetment for nearly four years. During the past year no work whatever has been done, and the revetment has fulfilled its purpose well. One small break in the upper revetment was reported on July 3, 1886, but is in no way dangerous.

The total amount spent on Vicksburg Harbor up to June 30, 1886, was \$373,894.41. Of this, \$203,229.87 was spent prior to the creation of the Mississippi River Commission, and under the Commission \$170,664.54 has been spent.

FINANCIAL STATEMENT.

Vicksburg Harbor (Delta Point).

Available balance, June 30, 1885	\$3,682 88
Transferred from general service	250 00
Total	3,932 88
Expended	3,872 29
Balance, pledged	60 59
Expended:	
For services	1,151 23
For material, supplies, and subsistence*	2,552 44
Miscellaneous (includes mileage, traveling expenses, and telegrams)	168 62
Total	3,872 29

LEVEES.

No work has been done on levees during the past fiscal year.

Yazoo Front.—The levees heretofore constructed, those by the Government, and by other means, have been kept up and in good repair by the State authorities, and during the past high water controlled the flood, no breaks occurring.

*This amount was the total of bills of supplies, &c., indebtedness of Lake Providence Reach, to offset material, supplies, and subsistence stores furnished from Lake Providence surplus stores for the work at Delta Point.

Tensas Front.—This system of levees in the third district extends from Cypress Bayou, Arkansas, to opposite Warrenton, Miss.

The levees in Louisiana remain intact, and held the flood in the past high water; but in Arkansas numerous breaks took place, notably from Cypress Creek to Arkansas City.

FINANCIAL STATEMENTS.

Levees—Tensas Front.

Available June 30, 1885	\$32 26
Transferred from Lake Providence	2,000 00
Total	2,032 26
Expended	32 26
Balance June 30, 1886	2,000 00
Expended—	
Retained percentage	\$3 82
For mileage	28 44
	32 26

Levees—Yazoo Front.

Available June 30, 1885	\$174 55
Expended	\$30 38
Transferred to Lake Providence	144 17
	174 55
Balance	0 00
Expended—	
Retained percentage	\$3 50
For mileage	26 88
	30 38

In conclusion I would respectfully call attention to the report of Assistant Engineer Arthur Hider, in local charge at Lake Providence Reach, appended.

My thanks are due to the assistant engineers and others on the work for the energy, zeal, and intelligence which they have shown.

Respectfully submitted.

WM. T. ROSSELL,
Captain of Engineers.

REPORT OF ASSISTANT ENGINEER HIDER.

WILSON'S POINT, LA., July 15, 1886.

SIR: The following report of operations for the fiscal year ending June 30, 1886, is respectfully submitted.

No construction work has been done during the year, except repairing the gaps in cross-dikes in the lower end of Baleshed Chute and the building of an additional dike across the chute on range 66. This work was done for the purpose of preventing the threatened widening of the chute at its lower end, and to counteract the tendency of the river to again make a channel behind Stack Island.

The work consisted in closing the gaps left in Stack Island cross-dike, and in dike No. 11, the previous season; building a new dike across the chute on range 66, and extending the dike on range 69 across the chute to the bar on the Mississippi shore.

Dike No. 10, on range 66, was constructed of four rows of piles securely braced, with a heavy footmat sunk between the rows of piling. Dikes Nos. 11 and 13, on ranges 67 and 69, were of two rows of piles braced, without footmat; the repairs to the Stack Island dike were made by re-enforcing the ends with three rows of piles, and driving three rows across the gap in front of the dike; the whole well braced, and a heavy footmat sunk across the gap. These repairs were begun November 17, 1885, and finished January 11, 1886.

The amount of the allotment was \$13,500; the amount expended, \$12,881.34.

PRESENT CONDITION OF CONSTRUCTION WORK.

Duncansby system of dikes.—These dikes have been carried away by the caving of the bar on which they were constructed; there are now standing portions only of cross-dikes 6,

7, and 8; the parts remaining are next the Mississippi shore, extending out from the bank about 800 feet.

Cottonwood system of dikes.—Breaks have occurred in the main dike above and below cross-dike No. 3, 400 and 300 feet in length respectively. The outer end of this cross-dike has also washed away for a length of 300 feet.

Mayersville system of dikes.—The large amount of drift which accumulated in front of this dike during the high water broke the dike, carrying with it the loose drift and breaking off the piling at a little above the 20-foot stage. There remain in front of the dike, extending across the chute, large quantities of drift embedded in the sand, which practically forms a sill.

The rapid caving off of the head of the island, however, will soon allow an entrance to the chute below the dike, and the dike itself will have little effect in filling up the chute.

Baleshed system of dikes.—The gap in the main dikes between ranges 64 and 66 since the last report has increased in length from 1,000 to 1,500 feet by the breaking off of the piles during the last high water. The entrance to the chute at this point has shoaled materially.

During the high water a large quantity of drift lodged against the upper of the cross-dikes built during the low-water season—dike No. 10. In February the dike gave way, the *débris* breaking through cross-dikes Nos. 11 and 13, and lodging in front of the Stack Island cross-dike; the width of the breaks through these dikes is about 400 feet. In other portions of the system there have been no breaks of importance.

The piles, which are of cottonwood, are rotting rapidly where exposed, and unless extensive repairs are made before the next high water season serious damage may be expected.

Stack Island System of Dikes.—The Stack Island dikes seem to have suffered no damage; the main cross-dike has large quantities of drift lodged in front of it, and is having a good effect in filling up the chute behind Stack Island.

Pilcher's Point Revetment.—There has been a gradual slipping in of the bank revetment during the year from time to time, until, except at the upper end, where about 1,500 feet of it is still intact, not more than 10 per cent. of the bank formerly revetted remains with the revetment in place, and this is distributed at irregular intervals in lengths of 300 feet and less.

Mayersville Island Revetment.—The head of the island has been gradually caving back until it is now opposite the Mayersville cross-dike. The face of the island has caved behind the revetment, destroying all the work done, except about 1,800 feet at the extreme lower end of the Island.

GENERAL EFFECT OF THE CONSTRUCTION WORKS.

The revetment constructed above Pilcher's Point has had the effect of preventing any further recession of the bend. The caving has practically ceased, and the shore line is about where it was when the revetment work was completed.

The Duncansby dikes may be considered to have served the purpose for which they were designed, reducing the volume of water formerly passing through Skipwith's Chute, and thereby preventing its enlargement. The consequent concentration of the water on the outside of the towhead has had the effect of improving the channel at this locality.

The Cottonwood dikes have caused the bar below to increase both in length and height, thereby concentrating the water along the outside of Mayersville Island, fixing the channel contiguous to the island.

The effect of the dikes in Mayersville chute has been to cause a general shoaling the entire length of the chute.

The Mayersville Island revetment has not been successful in preventing the caving back of the face of the island.

The Baleshed dikes have been the means of changing the river channel from behind Stack Island, and of maintaining a good channel in this part of the reach.

The effect of the Stack Island dikes is shown by the filling up of the chute behind Stack Island.

CHANNEL DEPTHS.

The general location of the low water channel through the reach is the same as last season, except the usual movement of the crossings from year to year down stream.

There has been an ample channel depth for all the requirements of navigation over the three shallow crossings and through the entire length of the reach; no difficulty on account of lack of water has been experienced.

The least depths during the low-water season of 1884 were, on Stack Island crossing,

10 feet; Ben Lomond crossing, 11 feet. During the low-water season of 1885 the least depths found on the same crossings were 14 and 13 feet respectively.

The lowest reading of the Lake Providence gauge was, October 26, 1885, 5.54 feet; the highest on May 7, 1886, 37.91 feet; a range of 32.37 feet between extreme high and extreme low water.

The least depths found during the low-water seasons of 1884 and 1885, also during the high-water of 1886, on the shallow crossings are given in the statement below.

Statement showing least channel depths, Lake Providence Reach, 1884-'85-'86.

	1884.			1885.				1886.			
	L. P. gauge reading.	Stack Island crossing.	Ben Lomond crossing.	L. P. gauge reading.	Duncansby crossing.	Stack Island crossing.	Ben Lomond crossing.	L. P. gauge reading.	Duncansby crossing.	Stack Island crossing.	Ben Lomond crossing.
Jan. 10	30.0	.....	.....	29.4	.....	40.0	39.0	17.3	27.0	24.0	24.0
Jan. 20	25.4	.....	.....	33.6	.....	46.0	43.0	22.5	32.0	31.0	27.0
Jan. 30	25.5	.....	.....	34.6	.....	44.0	42.0	21.5	31.0	29.0	32.0
Feb. 10	30.0	.....	.....	31.4	.....	39.0	38.5	20.5	27.0	27.0	20.5
Feb. 20	36.9	.....	.....	27.1	.....	33.0	33.0	27.5	35.0	33.0	27.5
Feb. 28	37.7	.....	.....	21.2	.....	24.5	26.5	31.7	38.0	32.0	31.7
Mar. 10	38.1	.....	.....	18.6	.....	23.5	26.0	32.0	42.0	29.0	38.0
Mar. 20	38.1	.....	.....	27.1	.....	.....	.....	25.0	30.0	27.0	34.0
Mar. 30	37.8	.....	.....	27.0	.....	.....	.....	22.5	33.0	27.0	35.0
Apr. 10	36.6	.....	.....	22.0	.....	.....	.....	32.3	40.0	36.0	32.3
Apr. 20	36.8	.....	.....	28.1	.....	.....	.....	35.5	41.0	39.0	35.5
Apr. 30	36.5	.....	.....	32.2	.....	.....	.....	37.5	43.0	38.0	35.8
May 10	36.5	.....	.....	35.5	.....	.....	.....	37.5	45.0	40.0	43.0
May 20	35.9	.....	.....	29.4	.....	.....	.....	35.5	43.0	38.0	44.0
May 30	32.5	.....	.....	22.9	.....	.....	.....	35.2	39.0	37.0	42.0
June 10	24.6	.....	.....	25.0	31.5	24.0	32.5	27.0	31.0	28.0	32.0
June 20	25.3	.....	.....	24.5	31.0	21.0	29.5	21.0	28.0	21.0	29.0
June 30	25.7	.....	.....	28.0	35.0	22.5	29.5	23.0	32.0	25.0	32.0
July 10	21.1	.....	.....	24.7	31.4	20.0	24.0	.....	.....	.....	.....
July 20	19.6	.....	.....	22.0	29.0	17.0	26.0	.....	.....	.....	.....
July 30	15.8	.....	.....	15.5	20.0	14.0	18.5	.....	.....	.....	.....
Aug. 10	15.5	18.0	24.0	14.0	19.0	14.0	21.0	.....	.....	.....	.....
Aug. 20	12.6	14.0	12.0	15.6	36.0	15.0	28.0	.....	.....	.....	.....
Aug. 30	8.9	10.0	14.0	12.3	30.0	15.0	29.0	.....	.....	.....	.....
Sept. 10	9.1	14.0	17.0	13.4	32.0	16.0	30.0	.....	.....	.....	.....
Sept. 20	6.6	17.0	11.0	18.0	35.0	19.0	25.0	.....	.....	.....	.....
Sept. 30	5.8	15.0	11.0	15.5	30.0	22.0	20.0	.....	.....	.....	.....
Oct. 10	14.8	24.5	15.0	9.0	22.0	14.0	15.0	.....	.....	.....	.....
Oct. 20	13.7	26.0	24.0	7.1	18.0	14.0	13.0	.....	.....	.....	.....
Oct. 30	12.0	24.5	22.5	8.0	18.0	15.0	14.0	.....	.....	.....	.....
Nov. 10	11.1	23.0	26.0	10.8	20.0	16.0	15.0	.....	.....	.....	.....
Nov. 20	7.25	21.0	17.0	19.3	34.0	28.0	26.0	.....	.....	.....	.....
Nov. 30	6.58	19.0	16.0	13.5	23.0	19.0	19.0	.....	.....	.....	.....
Dec. 10	7.83	20.0	18.0	10.5	21.0	18.0	18.0	.....	.....	.....	.....
Dec. 20	11.0	23.5	19.0	12.0	22.0	21.0	19.0	.....	.....	.....	.....
Dec. 30	12.0	21.0	20.0	16.5	25.0	24.0	24.0	.....	.....	.....	.....

NOTE.—No soundings were taken on the crossings from January to August, 1884, or from March to June, 1885, the river being at mid stage.

From comparison of the special surveys of December 3, 1884, March 3, and December 17, 1885, made in the bend above Pilcher's Point to determine the condition of the revetment work there constructed, it would seem that in this locality the mattress built failed to protect the bottom from the eroding action of the current. Seven of the eleven sections show a scour of varying depth; on one section the scour is 80 feet deep. On the other four sections the bottom has filled in over the mat in places 25 feet deep. From an examination of some of the sections, an increase in the width of mats so as to extend out to the deepest water would suggest itself as the proper way to meet this difficulty. On other sections the indications are such that it is uncertain whether such increase of width would accomplish the desired result.

The destruction of the upper bank revetment in many places has evidently been due to the current acting under the revetment where not of sufficient thickness, or else that slips or caves above allowed the water to find its way under the revetment and to erode the light material of which the bank is composed, gradually undermining and steepening the slope, until the support of the revetment was removed, and it slipped bodily in

In other cases the destruction of the revetment seems to be due to sinking down suddenly of portions of the bank. This can be accounted for by the fact of the water saturating the fine sand which is frequently found in layers distributed in the bank. The dry sand is thus transformed into a semi-fluid state in the nature of quicksand, and a fall taking place in the river the sand flows out, leaving a void under the bank. This causes a settlement of the bank and the destruction of the revetment.

Where banks are to be reveted, and the material of which they are composed is of sand or other similar material, experience seems to demand a thicker and wider mat, and a revetment more closely laid than has been the practice heretofore, to insure satisfactory results.

In dike work where, on account of their height, the cottonwood piles have been exposed during successive low-water seasons, the piles, braces, and longitudinal stringers have rotted to such an extent as to reduce their strength, so that they have but little stability. The life of cottonwood, when thus exposed to the alternate action of the water and air, is of short duration. The change to cypress timber for the construction of dikes where practicable, and dikes of increased strength in localities where drift in large quantities is to be encountered, is recommended.

In fact, stronger constructions, both of revetment and dike work, are believed to be necessary to insure stability. The experiences of the last two seasons all point in this direction.

CAVING BANKS.

Below are the localities where the greatest amount of caving has taken place during the year.

Right bank.—For a distance of two miles below Pilcher's Point, in the vicinity of Elton Plantation, and at Judge Montgomery's.

Left bank.—At Williams' Plantation, the head of Mayersville Island, and in the vicinity of Ben Lomond.

The amount of caving of the banks from range 14 to range 100, a length of channel of 28.371 miles, for a period of nearly three years, is shown in the statement below. The original shore-line survey of November, 1881, has been compared with that of October, 1884, and measurements taken at intervals of 1,000 feet on both sides of the river. The mean of all the measurements thus obtained for each section of the river compared has been entered in the tabular statement as the average width of the caving for that particular section.

Statement showing average bank recession from November, 1881, to October, 1884; Lake Providence Reach.

Section of river.	Distances.		Average width of caving.				Mean annual caving.		Section.
	R. bank.	L. bank.	R. bank.	Number of measurements.	L. bank.	Number of measurements.	R. bank.	L. bank.	
	Feet.	Feet.	Feet.		Feet.		Feet.	Feet.	
R. 14 to R. 30	32,600	25,600	88.0	31	86.3	23	30.2	29.5	1
R. 30 to R. 50	33,400	40,200	51.6	30	143.7	41	17.6	49.2	2
R. 50 to Δ Arlington.....	51,700	46,000	84.6	49	89.1	48	29.0	30.5	3
Δ Arlington to R. 100.....	41,300	27,000	179.9	43	124.2	27	61.7	42.6	4

Length of shore-line compared, right bank 30.1 miles; left bank 26.2 miles; channel length 28.371 miles.

	Feet.
Mean yearly distance bank recession right bank, 153 measurements	91.2
Mean yearly distance bank recession left bank, 139 measurements	38.2
Average yearly increase of width of river between high-water main shore lines..	129.4
	Acres.
Average yearly rate of caving	416.9
Average yearly rate for each channel mile	14.7

Amount expended for labor and subsistence.

Classification.	Pay-roll.	Subsistence.	Total.
Care of fleet and property.....	\$20,276 29	\$3,636 17	\$23,912 46
Repairs to dikes in Baleshed Chute.....	6,441 58	1,506 13	7,947 71
Total.....	26,717 87	5,142 30	31,860 17

The maximum number of men employed in any one month was 150; the minimum 35.
 Cost of raw material, each ration \$0.265
 Cost of each ration served 0.381
 Cost of each ration for each day's labor served 0.410

Work done.

Footmat built and sunk squares...	460.18	Braces, diagonal number...	48
Brush cut and loaded cords...	481.3	Barges calked do	10
Poles cut and loaded.....do.....	76	Boats (quarter) calked .....do.....	2
Rock loaded.....cubic yards...	381	Pile-drivers calked .....do.....	8
Piles driven number...	978	Skiffs repaired and calked.....do.....	7
Stringers put on .....do.....	381	Pile-driver engines fitted up.....do.....	7
Braces put on.....do.....	786		

Boiler changed on Meter, and outside painted; Vidalia painted and other repairs; minor repairs made to boats and machinery.

Material expended.

Stone cubic yards...	521	Coal.....bushels...	10,394½
Poles cords...	76	Lumber, B. M.....feet....	3,295
Piles number...	978	Gas pipe .....do.....	297
Stringers .....do.....	381	Iron.....pounds...	635
Braces .....do.....	786	Oakum .....do	4,081
Braces, diagonal.....do.....	48	Brass .....do.....	3
Wire.....pounds...	14,939	Babbitt metal .....do.....	24
Spikes.....do.....	9,971	White lead .....do.....	500

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River, third district.

Class of property.	Approximate value, June 30, 1886.	Class of property.	Approximate value, June 30, 1886.
Steamer Osceola (tow-boat).....	\$17,500	1 carpenter-shop boat	\$2,700
Steamer Vidalia (tow-boat).....	15,000	1 floating dry-dock (with machinery).....	3,000
Steamer Emma Etheridge (tow-boat)	11,600	1 end-dock, 37 by 16.....	100
Steamer Meter (survey boat)	6,000	1 end-dock, 27 by 3	50
2 hydraulic graders.....	30,000	1 wharf-boat	800
1 hydraulic grader (old)	800	1 derrick-boat	800
2 mattress-boats, 200 by 30	5,400	1 pump-boat (with machinery).....	800
4 mattress-boats, 160 by 30	9,000	45 barges, decked and scow built ...	57,000
1 mattress-boat, 149 by 49 (old)	800	11 barges, model	36,000
4 screen-boats	3,600	16 pile-drivers (with machinery) ...	44,000
1 quarter-boat, 135 by 30 (with outfit)	3,250	1 catamaran.....	75
10 quarter-boats, 130 by 25 (with outfit)	25,000	10 calking-flats.....	100
1 quarter-boat, 100 by 30 (with outfit)	1,800	7 yawls.....	400
2 quarter-boats, 100 by 25 (with outfit)	2,500	59 skiffs	400
2 quarter-boats, 80 by 20 (with outfit)	1,800	18 coal-barges and boats (old).....	3,000
1 quarter-boat, 70 by 18 (with outfit)	400	Tools and appliances	3,700
1 machine-shop boat (old)	250	Office furniture (including drawing instruments)	730
1 machine-shop boat (with outfit of machinery).....	4,500	Surveying instruments	2,000
		Total	294,355

APPENDIX H.

REPORT OF MAJOR C. W. RAYMOND, CORPS OF ENGINEERS, UPON OPERATIONS IN THE FOURTH DISTRICT.

UNITED STATES ENGINEER OFFICE,
New York, July 20, 1886.

COLONEL: I have the honor to transmit herewith my annual report of operations for year ending June 30, 1886, for works under my charge in fourth district, for improving Mississippi River.

The charge of this district was transferred to me by Major Amos Stickney, Corps of Engineers, February 27, 1886.

Very respectfully, your obedient servant,

CHAS. W. RAYMOND,
Major of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, President Mississippi River Commission.

IMPROVEMENT OF THE HARBOR OF NEW ORLEANS, LOUISIANA.

The adopted projects for work in New Orleans Harbor are, first, to cover the caving bank in the Carrollton Bend for a distance of about 10,000 linear feet, with a mattress of willow brush ballasted with stone; second, to protect the portion of bank known as Gouldsboro' Bend, about 5,000 linear feet, by means of sloping submerged spurs, made mostly of brush and stone and placed at intervals which are as yet experimental, varying from 500 to 1,600 feet.

The total amount expended on the above projects to June 30, 1885, is \$146,047.02.

A small portion of the brush mattress has been laid in the Carrollton Bend. Two spurs have been completed, and the foundation mattress and two cribs of a third placed in the Gouldsboro' Bend.

A valuable plant for the work has been acquired, and nearly all the stone for ballast, iron rods, and other material, except brush, for the completion of the six spurs in the Gouldsboro' Bend is on hand.

Owing to lack of funds no work has been done during the fiscal year except care of property, and a survey to determine the effect and condition of the submerged spurs constructed in the previous year.

The survey was made in November and December, 1885, and developed the fact that the 100-foot contour had been thrown out from the bank. The other contours, while not so much changed in position, had become more regular.

No caving of the bank or damage to the spurs could be discovered by inspection or inquiry.

The gentle slope of the top of the spurs from the bottom at river end to low-water surface at shore end, thus avoiding any abrupt change of cross-section of water-way, appears to have accomplished the hoped-for result of deflecting the current from the bank without causing any great scour at river end of spur or violent eddy below.

While the results appear favorable to this method of bank protection, a longer time must of course elapse before the test can be considered satisfactory.

The revised estimated additional amount needed for completion of work in New Orleans harbor is as follows:

Carrollton Bend (mattress project)	\$158,600
Gouldsboro' Bend (completion), spurs	35,000
Gretna Bend, spurs	64,200
Bend above Gretna to a point nearly opposite City Park, right bank, spurs---	396,600
Total	654,400

The amount that can be profitably expended during the fiscal year ending June 30, 1888, is \$100,000.

The work is in the collection district of New Orleans.

The nearest light-house is at the mouth of the Mississippi River.

The total exports of merchandise for the fiscal year ending June 30, 1886, was \$82,303,520.93.

FINANCIAL STATEMENT.

Improving Mississippi River (no limit)—Harbor at New Orleans.

July 1, 1885, balance on hand	\$596 57
Sept. 7, 1885, amount allotted	4,000 00
Nov. 13, 1885, amount allotted	162 86
Nov. 16, 1885, amount allotted	1,400 00
	6,159 43
July 1, 1886, amount expended during fiscal year, exclusive of outstanding liabilities, July 1, 1885	4,151 78
	2,007 65
July 1, 1886, balance on hand	

CUSTOM-HOUSE, NEW ORLEANS, LA.,
Collector's Office, July 12, 1886.

SIR: The following statistics relative to the commerce of this port are furnished in compliance with the request contained in your letter of the 16th ultimo:

Entrances and clearances of vessels, coastwise and foreign, from July 1, 1885, to June 30, 1886, inclusive.

	Entrances.		Clearances.	
	No.	Tonnage.	No.	Tonnage.
Total steam-vessels	677	879,132	691	897,153
Total sail-vessels	307	198,887	282	187,876
Total vessels	984	1,085,029	973	1,085,029

Imports and exports at the port of New Orleans, La., from July 1, 1885, to June 30, 1886, inclusive.

IMPORTS.

Merchandise, free	\$4,740,969
Merchandise, dutiable	3,349,800
Total, free and dutiable	8,090,769

Gold coin and bullion:

Gold bars	\$9,640
Other bullion	44,190
American coin	500
Foreign coin	1,400

Silver coin and bullion:

Bullion	7,300
American coin	9,597
Foreign coin	116,808

Total, coin and bullion

189,435

EXPORTS.

Foreign merchandise	1,036,416
Domestic merchandise	81,532,468
Total	82,568,884

Total duties on imports for fiscal year ending June 30, 1886, \$1,303,520.93.

Very respectfully,

B. F. JONAS, *Collector.*

Maj. CHAS. W. RAYMOND,

United States Engineer Office, 3 Rampart Street, New Orleans.

IMPROVEMENT OF THE MOUTH OF RED RIVER AND RECTIFICATION OF THE RED AND ATCHAFALAYA, AT THE MOUTH OF RED RIVER, LOUISIANA.

No work in pursuance of any project for the permanent improvement of the rivers in this locality has been done.

A project was prepared by the Mississippi River Commission, and is published in their report for 1884, but no instructions as to the carrying out of this plan have been received.

In the latter part of July, 1885, those interested in the maintenance of navigation through Old River became apprehensive that it would be suspended, owing to the rapid fall of the Mississippi River, and requested that steps be taken to maintain the low-water channel.

The funds on hand were not sufficient to undertake any work, but on August 28 instructions were received from the President of the Mississippi River Commission to commence work, and an allotment of funds was made by the Commission.

The steamer General Newton, belonging to the work of improving harbor at New Orleans, was put in commission and prepared for the work. An iron scraper made of boiler-plate, 16 feet wide and 3 feet high, strongly braced, was constructed. This scraper was attached to the bow of the Newton in such a manner that it could be raised and lowered by means of a proper derrick frame.

The Newton, with a light-draft barge and a barge of coal, left New Orleans September 5, and arrived at Red River Landing on the 7th. A pile-driver and three small barges, kindly loaned by Captain Sears, from the third district, arrived at Red River Landing on the 5th, where the launch Ruby, with a quarter-boat, had been previously sent from Natchez.

An examination was made on September 7, which showed only $4\frac{1}{2}$ feet on the crest of the bar at the mouth, and from 7 to 17 feet through Old River. The Red River Landing gauge read 12.30, and the Barbre's Landing gauge 7.9.

The scraper was immediately put to work on the bar at the mouth, and in three or four days made a channel whose least depth was between 8 and 9 feet, which proved it to be very effective.

The pile-driver and barges were taken into Old River, and commenced at once to construct light dike work for contracting the channel between Chandler's and Barbre's. These dikes were built of very small piles driven in two rows, and the space between the rows filled with willows ballasted with sand bags. They answer the purpose for which they are intended during the low-water season, and are swept away during the flood season, leaving no obstruction.

During a temporary rise of the river the scraper work was suspended on September 11, and the dike-work after two dikes had been constructed. The plant was laid up at Red River Landing, and a small force retained to make repairs necessary to have all in readiness for resuming work when the falling river should make it necessary.

The river commenced to fall on September 28, and on October 7 there was 8 feet on the bar at the mouth. The General Newton was put to work with the scraper on the 8th, with 6 feet scant, and on the evening of the 9th had secured a good 8-foot channel.

Additional dikes were constructed between Chandler's and the head of the Atchafalaya, and at the mouth of Old River a dam 225 feet long was built, to close an opening in the bar, that the current might be concentrated in the scraped channel.

On October 29 an examination was made and soundings taken from the mouth of Old River to the head of the Atchafalaya. The least navigable depth was found to be $4\frac{1}{2}$ feet at intervals, but the channel was very narrow. All steamers in the trade continued to run as usual. On this date (October 29) the Red River Landing gauge read 6.4, and the Barbre's Landing 1.5, against 12.30 and 7.9, respectively, on September 7, when work was commenced with $4\frac{1}{2}$ feet on the bar at the mouth. From this it will be seen that portions of the channel of Old River would have been dry, and navigation entirely suspended, but for the work done by the United States.

On November 3, the river having commenced to rise, scraping was discontinued, and on the 10th dike construction was suspended. The piles in the temporary dikes and the dam at the mouth of Old River, which might prove obstructions at a higher stage of water, were removed as far as possible, and barrel buoys placed on the sites. The plant was overhauled, put in good condition, and returned to the points from which it was taken.

The season's work closed on November 30, since which time there has been nothing done except care of property and office work.

The gauge at Barbre's Landing has been read during the year.

The work is in the collection district of New Orleans, which is the nearest port of entry.

COMMERCIAL STATISTICS.

All the river commerce of the Red River, Bayous Tensas and Macon, Ouachita and Black Rivers, the Atchafalaya, Bayous Courtableau and Des Glaizes, together with numerous tributaries and a large portion of the commerce of Bayou Têche, passes through Old River. Several lines of steamers run regularly in the trade. The total value of the commerce to be benefited by the improvement amounts to over \$40,000,000 annually.

The amount which can be profitably expended during the year ending June 30, 1888, cannot be stated until work upon a definite plan is inaugurated. To maintain navigation between the Mississippi and the Red and Atchafalaya by the temporary devices heretofore used would require an estimated annual appropriation of \$25,000.

FINANCIAL STATEMENT.

Improving Mississippi River (no limit)—Mouth of Red River.

Balance on hand July 1, 1885	\$ 3,816 08
September 7, 1885, amount allotted	7,000 00
November 9, 1885, amount allotted	3,500 00
November 16, 1885, amount allotted	1,400 00
Total	15,716 08
July 1, 1886, amount expended during fiscal year, exclusive of outstanding liabilities July 1, 1885	11,351 65
July 1, 1886, balance on hand	4,364 43

IMPROVEMENT OF THE MISSISSIPPI RIVER AT NATCHEZ AND VIDALIA, MISSISSIPPI AND LOUISIANA.

No work has been done in this vicinity, owing to the lack of funds.

The approved project contemplates the protection of the caving banks by means of submerged sloping spurs placed at intervals to be determined as the work progresses, but assumed for estimate of cost at 1,000 feet. The estimated cost is \$600,000.

To prevent the flow of water across the neck of land between Giles and Cowpen bends, and the anticipated destruction of the harbors of Natchez and Vidalia by a cut-off, it is proposed to construct a levee at an estimated cost of \$100,000. This makes the total estimates \$700,000.

The amount which can be profitably expended during the year ending June 30, 1888, is \$250,000 for the purchase of the necessary plant, the construction of the levee, and commencement of dike work.

There is received annually at Natchez, Miss., about 40,000 tons provisions, groceries, and machinery, 7,000 tons cotton seed, 25,000 tons coal. The shipments are about 40,000 bales cotton, 4,000 tons oil products. About twelve hundred steamers arrive and depart.

At Vidalia the receipts are 8,000 tons produce, provisions, machinery, etc., and the shipments 10,000 bales cotton and 2,000 tons cotton seed. A railroad recently completed to Trinity, La., will add materially to the commerce of Vidalia.

The work is in the collection district of New Orleans, which is the nearest port of entry.

FINANCIAL STATEMENT.

July 1, 1885—Balance on hand	\$1,625 95
July 1, 1886—Amount expended, exclusive of outstanding liabilities July 1, 1885	625 30
July 1, 1886—Balance on hand	1,000 65

CONSTRUCTION AND REPAIR OF LEVEES.

The project of levee building adopted by the Mississippi River Commission has so far been simply to close the existing gaps in the lines already established by constructing levees as far as the funds allotted will permit, with locations of reasonable permanence

and grades equal to the adjacent levees. While proceeding under this plan, the loss of levees by caving banks and their breaching by floods may be annually anticipated.

At the beginning of the fiscal year no embankment construction was in progress; the levees generally throughout the district were in better condition than at any time in the previous twenty years. Lack of funds has prevented any new work being undertaken during the past fiscal year.

The sinking of Kempe Levee, at Potter's Slough, necessitated some repair work being done during the months of February and March, 1886. The embankment was placed in good condition, but it again settled, and additional work was necessary in April and May, 1886.

The parochial authorities of Tensas Parish have raised the grade and enlarged the cross section of the following United States levees: Point Pleasant, Shipp's Bayou to Hard Times, Hardscrabble, Bondurant, and for about two-thirds of the length of the United States Kempe Levee.

The rapid caving of the bank occasioned a gap in the United States Bondurant Levee, and a new piece of levee was built by the State and parish to close it.

The flood of 1886 did not severely strain the levees of the district, and no breaks have occurred in the levees built by the United States.

The lines of levee are now continuous throughout the district, with the following exceptions:

Diamond Island Bend, a gap about 50,000 feet long.

Bougere Bend, a gap about 23,400 feet long.

Black Hawk to Red River, a gap about 90,000 feet long.

Morganza Crevasse, a gap about 6,000 feet long.

Maps showing on one sheet the location, profile, and cross-section of nearly all the levees have been made.

The extensive plant and outfit required in the prosecution of levee work by hired labor has been cared for and repaired, and is in first-class condition for service.

The commerce benefited is all that of the lower Mississippi River.

The work coming under the general appropriation for improving the Mississippi River from Cairo to the Head of the Passes, no separate appropriation is asked for.

FINANCIAL STATEMENT.

Improving Mississippi River (no limit).

A.—Levees, Atchafalaya Front:

July 1, 1885, balance on hand	\$9, 496 07
Nov. 16, 1885, transferred to levees Tensas Front.....	\$3, 400 00
Nov. 16, 1885, transferred to mouth of Red River.....	1, 400 00
Nov. 16, 1885, transferred to harbor at New Orleans	1, 400 00
	6, 200 00
	3, 296 07
July 1, 1886, expended during fiscal year, exclusive of outstanding liabilities July 1, 1885	2, 784 72
	511 35

B.—Levees, Tensas Front:

July 1, 1885, balance on hand	611 76
Nov. 16, 1885, amount allotted	3, 400 00
June 16, 1886, amount allotted	1, 000 00
	5, 011 76
July 1, 1886, amount expended during fiscal year, exclusive of outstanding liabilities July 1, 1885	3, 598 04
	1, 413 72

Approximate value of plant belonging to the United States and used upon the improvement of Mississippi River, fourth district.

Class of property.	Approximate value, June 30, 1886.
Steamer General Newton.....	\$8,900
Steam-tug Tilda.....	4,100
Steam-launch Ruby.....	3,500
Steam-launch Alaska.....	2,500
Two quarter-boats.....	2,700
Fifteen barges.....	22,200
Seven skiffs, row-boats, &c.....	160
Tools and appliances.....	4,206
Office furniture.....	555
Surveying instruments.....	1,507
Miscellaneous.....	1,729
Total.....	51,657

The first part of the report contains a summary of the work done during the year, and a statement of the results obtained. The second part contains a detailed account of the work done, and a statement of the results obtained.

The third part contains a statement of the results obtained, and a statement of the results obtained. The fourth part contains a statement of the results obtained, and a statement of the results obtained.

The fifth part contains a statement of the results obtained, and a statement of the results obtained. The sixth part contains a statement of the results obtained, and a statement of the results obtained.

The seventh part contains a statement of the results obtained, and a statement of the results obtained. The eighth part contains a statement of the results obtained, and a statement of the results obtained.

The ninth part contains a statement of the results obtained, and a statement of the results obtained. The tenth part contains a statement of the results obtained, and a statement of the results obtained.

The eleventh part contains a statement of the results obtained, and a statement of the results obtained. The twelfth part contains a statement of the results obtained, and a statement of the results obtained.

WAR DEPARTMENT EMPLOYÉS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

Lists of employés in that Department, and stating that all are usefully employed, and that the services of none of them can be dispensed with.

DECEMBER 14, 1886.—Referred to the Committee on Expenditures in the War Department and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 13, 1886.

The Secretary of War has the honor to transmit to Congress, in compliance with section 194 of the Revised Statutes, the accompanying lists of the clerks and other persons employed in the War Department from December 1, 1885, to November 30, 1886, and to respectfully state that they have all been usefully employed, and that the service of none of them can be dispensed with without detriment to the public service. The removal of any individuals and the appointment of others in their stead is not required for the better dispatch of business.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Statement showing the names, compensation, &c., of clerks, messengers, assistant messengers watchmen, and laborers employed in the office of the Secretary of War, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS A.						
Chief Clerk.						
1	John Tweedale	\$2,750	Dec. 1, 1885	Nov. 30, 1886	\$2,750 00	Pennsylvania.
CLASS B.						
Disbursing clerk.						
2	William S. Yeatman	2,000	Oct. 15, 1886	do	255 91	Dist. of Columbia.
Chiefs of Division.						
3	Samuel Hodgkins.....	2,000	Dec 1, 1885	do	2,000 00	Army.
4	Jay Stone.....	2,000	do	do	2,000 00	Minnesota.
5	L. W. Tolman.....	2,000	do	do	2,000 00	Massachusetts.
CLASS 4.						
Stenographer.						
6	Charles S. Sweet.....	1,800	do	do	1,800 00	Illinois.
Clerks.						
7	C. H. Carrington	1,800	do	do	1,800 00	Ohio.
8	Benjamin F. Wilkins.....	1,800	do	do	1,800 00	Vermont.
9	James A. Randall.....	1,800	do	do	1,800 00	New York.
10	Sydney E. Smith.....	1,800	do	do	1,800 00	Dist. of Columbia.
11	Charles R. Fosdick.....	1,800	do	do	1,800 00	Ohio.
CLASS 3.						
12	William B. Lee	1,600	do	do	1,600 00	Massachusetts.
13	Frank Jones.....	1,600	do	do	1,600 00	New York.
14	R. E. Moore	1,600	do	do	1,600 00	Michigan.
15	David Fitz Gerald	1,600	do	do	1,600 00	Iowa.
16	John B. Randolph	1,600	do	do	1,600 00	Dist. of Columbia.
17	M. R. Thorp	1,600	do	do	1,600 00	Ohio.
18	M. P. King.....	1,600	do	do	1,600 00	Dist. of Columbia.
CLASS 2.						
19	C. Bankes Brookes.....	1,400	do	do	1,400 00	Army.
20	Francis W. Edwards.....	1,400	do	do	1,400 00	Massachusetts.
21	Louis Koerth.....	1,400	do	do	1,400 00	Army.
22	J. P. Hodges	1,400	do	do	1,400 00	Iowa.
23	C. B. Tanner.....	1,400	do	do	1,400 00	Pennsylvania.
24	Thomas M. Reed	1,400	do	do	1,400 00	New Jersey.
25	Charles C. M. Loeffler	1,400	do	do	1,400 00	Dist. of Columbia.
26	H. C. Rutter	1,400	do	do	1,400 00	Ohio.
27	J. S. Phelps.....	1,400	do	do	1,400 00	Vermont.
CLASS 1.						
28	William R. Hillyer	1,200	do	do	1,200 00	Florida.
29	C. L. Walker	1,200	do	do	1,200 00	New York.
30	F. W. Ford.....	1,200	do	do	1,200 00	Dist. of Columbia.
31	F. P. Bronaugh.....	1,200	do	do	1,200 00	Do.
32	Edward Dunn	1,200	do	do	1,200 00	Ohio.
33	T. H. Parsons.....	1,200	do	do	1,200 00	Maryland.
34	Thomas Reed	1,200	do	do	1,200 00	Dist. of Columbia.
35	F. I. Hunter.....	1,200	do	do	1,200 00	Do.
36	M. L. Stowell	1,200	do	do	1,200 00	Kansas.
37	Clinton H. Emerson	1,200	do	do	1,173 60	New York.
38	Frank M. Kiggins.....	1,200	do	do	1,200 00	Tennessee.
39	Daniel A. Whitesell	1,200	do	do	1,200 00	Pennsylvania.
40	Macdonald Douglass.....	1,200	do	do	1,200 00	Do.
41	J. T. Smith.....	1,200	do	do	1,200 00	New York.
42	Maurice Pechin.....	1,200	do	do	1,200 00	Dist. of Columbia.
43	Robert W. Kerr	1,200	do	do	1,200 00	Ohio.
44	Charles O. Pierson.....	1,200	do	do	1,200 00	New York.
45	D. E. Sharretts.....	1,200	do	do	1,200 00	Pennsylvania.
46	Samuel B. Loving	1,200	do	do	1,200 00	Virginia.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
47	Alfred B. C. Clement	\$1, 200	Dec. 1, 1885	Nov. 30, 1886	\$1, 200 00	New York.
48	Alex. L. Robinson	1, 200	do	do	1, 200 00	Do.
49	James A. Coolidge	1, 200	do	do	1, 200 00	Dist. of Columbia.
50	James C. Churchill	1, 200	do	do	1, 200 00	New Mexico.
51	George B. Hoyt	1, 200	do	do	1, 200 00	Massachusetts.
52	G. C. Thomas	1, 200	do	do	1, 200 00	Dist. of Columbia.
53	G. W. Titcomb	1, 200	do	do	1, 200 00	Maine.
54	Samuel Snow	1, 200	Jan. 22, 1886	do	1, 030 00	Connecticut. Pennsylvania.
55	R. Grant Barnwell	1, 000	Feb. 6, 1886	Oct. 18, 1886	698 91	
		1, 200	Oct. 19, 1886	Nov. 30, 1886	141 30	
CLASS C.					840 21	
56	N. H. Stevens	1, 000	Dec. 1, 1885	do	1, 000 00	New York.
57	W. C. Taylor	1, 000	do	do	1, 000 00	Virginia.
58	Thomas Sheridan	1, 000	do	do	1, 000 00	Dist. of Columbia.
59	A. D. Wilcox	1, 000	do	do	1, 000 00	Pennsylvania.
60	Seward Beall	1, 000	do	do	1, 000 00	Maryland.
61	A. N. Thompson	1, 000	Mar. 6, 1886	do	702 90	Dist. of Columbia.
Carpenter.						
62	A. R. Johnson	1, 000	Dec. 1, 1885	do	1, 000 00	Virginia.
Foreman of laborers.						
63	William M. Johnson	1, 000	do	do	1, 000 00	Dist. of Columbia.
Messengers.						
64	W. S. Dupee	840	do	do	840 00	Kentucky.
65	J. H. Stewart	840	do	do	840 00	Maryland.
66	W. C. Costin	840	do	do	840 00	Dist. of Columbia.
67	A. Brooks	840	do	do	840 90	Virginia.
Assistant messengers.						
68	Henry D. Burwell	720	do	do	720 00	Virginia.
69	Patrick Carroll	720	do	do	720 00	Dist. of Columbia.
70	Thomas Irwin	720	do	do	720 00	Do.
71	Thomas Gooley	720	do	do	720 00	Do.
72	W. L. Parvin	720	do	do	720 00	Iowa.
73	William D. Buckley	720	do	do	720 00	Dist. of Columbia.
74	Frank B. Bourn	720	Dec. 15, 1885	do	693 26	Rhode Island.
Laborers.						
75	E. Stannard	660	Dec. 1, 1885	do	660 00	Dist. of Columbia.
76	George W. Graves	660	do	do	660 00	Do.
77	Horatio N. Smith	660	do	do	660 00	Massachusetts.
78	H. C. James	660	do	do	660 00	Dist. of Columbia.
79	James W. Loveless	660	do	do	660 00	Do.
80	Charles McEntyre	660	do	do	660 00	Ohio.
81	Henry Harris	660	do	do	660 00	Dist. of Columbia.
82	Charles A. Payton	660	Nov. 30, 1886	do	20 33	Virginia.
Hostlers.						
83	Thomas S. Anderson	600	Dec. 1, 1885	do	600 00	Dist. of Columbia.
84	John H. Wilson	540	do	do	540 00	Maryland.
85	John W. Thompson	540	do	do	540 00	New York.
Watchman.						
86	William Crompton	540	do	do	540 00	Dist. of Columbia.

Statement showing the names, compensation, &c., of clerks, messengers, assistant messengers, watchmen, and laborers employed in the office of the Adjutant-General, United States Army, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS B.						
Chief clerk.						
	Raphael P. Thian.....	\$2, 000	Dec. 1, 1885	Nov. 30, 1886	\$2, 000 00	New York.
CLASS 4.						
1	William J. Armstrong.....	1, 800	do	do	1, 800 00	Pennsylvania.
2	Richard J. Blakelock.....	1, 800	do	do	1, 800 00	Dist. of Columbia.
3	Max Bock.....	1, 800	do	do	1, 800 00	Do.
4	Henry S. Brinkerhoff.....	1, 800	do	do	1, 800 00	New York.
5	Charles Brown.....	1, 800	do	do	1, 800 00	Do.
6	John J. Dermody.....	1, 800	do	do	1, 800 00	Dist. of Columbia.
7	Henry Douglas.....	1, 800	do	do	1, 800 00	Do.
8	Benjamin Engel.....	1, 800	do	do	1, 800 00	Do.
9	Eugene Gaither.....	1, 800	do	do	1, 800 00	Do.
10	Nathaniel Hershler.....	1, 800	do	do	1, 800 00	Illinois.
11	John C. Hesse.....	1, 800	do	do	1, 800 00	Dist. of Columbia.
12	David E. Holmes.....	1, 800	do	do	1, 800 00	West Virginia.
13	Joseph W. Kirkley.....	1, 800	do	do	1, 800 00	Maryland.
14	Oliver W. Longan.....	1, 800	do	do	1, 800 00	Pennsylvania.
15	Joseph S. McCoy.....	1, 800	do	do	1, 800 00	New York.
16	J. William Palmer.....	1, 800	do	do	1, 800 00	Minnesota.
17	William N. Peck.....	1, 800	do	do	1, 800 00	New York.
18	George W. Pratt.....	1, 800	do	do	1, 800 00	Maine.
19	John D. Sabine.....	1, 800	do	do	1, 800 00	Massachusetts.
20	George W. Salter.....	1, 800	do	do	1, 800 00	New York.
21	Charles W. Shelton.....	1, 800	do	do	1, 800 00	Massachusetts.
22	Frederick H. Stafford.....	1, 800	do	do	1, 800 00	New York.
23	Frederick T. Wilson ¹	1, 800	do	May 9, 1886	705 43	Massachusetts.
			May 10, 1886	Nov. 30, 1886	1, 006 14	
					1, 711 57	
24	Henry C. Wood.....	1, 800*	Dec. 1, 1885	do	1, 800 00	Pennsylvania.
25	Elon A. Woodward.....	1, 800	do	do	1, 800 00	New York.
	William M. Porter ²	1, 800	do	May 9, 1886	792 86	Massachusetts.
CLASS 3.						
1	Jeremiah C. Allen.....	1, 600	do	do	1, 600 00	Wisconsin.
2	William Anderson.....	1, 600	do	do	1, 600 00	New York.
3	Stephen Bates.....	1, 600	do	do	1, 600 00	Massachusetts.
4	John Bingham.....	1, 600	do	do	1, 600 00	Pennsylvania.
5	Gustavus A. Brandt.....	1, 600	do	do	1, 600 00	Dist. of Columbia.
6	William Bremer.....	1, 600	do	do	1, 600 00	Indiana.
7	John W. Brown.....	1, 600	do	Nov. 30, 1886	1, 600 00	Maine.
8	Laurence J. Bryan.....	1, 600	do	do	1, 600 00	New York.
9	Benjamin F. Cole ³	1, 600	do	May 9, 1886	618 00	Do.
			May 10, 1886	Nov. 30, 1886	894 57	
					1, 512 57	
10	James H. Dodge.....	1, 600	Dec. 1, 1885	do	1, 600 00	Maryland.
11	James R. Gibson.....	1, 600	do	do	1, 600 00	Missouri.
12	Francis J. Gramlich.....	1, 600	do	do	1, 600 00	Maryland.
13	John M. Harmon.....	1, 600	do	do	1, 600 00	Massachusetts.
14	Francis B. Heitman.....	1, 600	do	do	1, 600 00	Ohio.
15	Joseph H. Jochum.....	1, 600	do	do	1, 600 00	New York.
16	Charles F. Keefer.....	1, 600	do	do	1, 600 00	Pennsylvania.
17	Harvey A. Kohr.....	1, 600	do	do	1, 600 00	Do.
18	Jesse Lee, jr.....	1, 600	do	do	1, 600 00	Maryland.
19	John McCarthy.....	1, 600	do	do	1, 600 00	Dist. of Columbia.
20	John T. Masters.....	1, 600	do	do	1, 600 00	New York.
21	Charles P. Miller, jr.....	1, 600	do	do	1, 600 00	Pennsylvania.
22	Franklin B. Miller.....	1, 600	do	do	1, 600 00	Do.
23	Joseph S. Miller.....	1, 600	do	do	1, 600 00	Do
24	Arthur M. Muzzy ³	1, 600	do	Dec. 31, 1885	118 00	Dist. of Columbia.
			Jan. 1, 1886	Nov. 30, 1886	1, 466 00	
					1, 584 00	

¹Promoted from Class 3.

²Resigned.

³Promoted from Class 2.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 3—Continued.						
25	George M. Nagle	\$1,600	Dec. 1, 1885	Nov. 30, 1886	\$1,600 00	Maryland.
26	Thomas B. Nolan	1,600	do	do	1,600 00	Pennsylvania.
27	William G. Powers	1,600	do	do	1,600 00	Massachusetts.
28	Justus H. Rathbone	1,600	do	do	1,600 00	Maryland.
29	Henry E. Scott	1,600	do	do	1,600 00	Dist. of Columbia.
30	Thomas R. Senior	1,600	do	do	1,600 00	Pennsylvania.
31	Elias S. Terry	1,600	do	do	1,600 00	Illinois.
32	Alva R. Tichenor	1,600	do	do	1,600 00	Ohio.
33	James P. Townsend	1,600	do	do	1,600 00	Massachusetts.
34	James W. Webb	1,600	do	do	1,600 00	New York.
35	Thomas Y. Yeates	1,600	do	do	1,600 00	Dist. of Columbia.
	Henry Ellerbrook ¹	1,600	do	Dec. 31, 1885	134 00	Do
CLASS 2.						
1	George Q. Allen	1,400	do	Nov. 30, 1886	1,400 00	Pennsylvania.
2	William A. Andre	1,400	do	do	1,400 00	Dist. of Columbia.
3	Edward H. Atkins	1,400	do	do	1,400 00	Connecticut.
4	George W. Babcock	1,400	do	do	1,400 00	Virginia.
5	George V. Balch	1,400	do	do	1,400 00	Dist. of Columbia.
6	Myron Boardman	1,400	do	do	1,400 00	New York.
7	Sanford Bradbury	1,400	do	do	1,400 00	Do.
8	Charles Brandt	1,400	do	do	1,400 00	Maryland.
9	John E. Bristol	1,400	do	do	1,400 00	New York.
10	John G. Brown	1,400	do	do	1,400 00	Dist. of Columbia.
11	John Bussius	1,400	do	do	1,400 00	Do.
12	John Cameron	1,400	do	do	1,400 00	Pennsylvania.
13	Morris Cohen	1,400	do	do	1,400 00	New York.
14	Charles E. Connor	1,400	do	do	1,400 00	Do.
15	Edmond Cotterill	1,400	do	do	1,400 00	Dist. of Columbia.
16	William A. Craig	1,400	do	do	1,400 00	New York.
17	Florence Donohue	1,400	do	do	1,400 00	Do.
18	William C. Doores	1,400	do	do	1,400 00	Pennsylvania.
19	William B. Douglass	1,400	do	do	1,400 00	Connecticut.
20	Alfred H. Elliott ²	1,400	do	do	1,384 77	Pennsylvania.
21	Benjamin F. Evans	1,400	do	do	1,400 00	Dist. of Columbia.
22	Samuel B. Evans	1,400	do	do	1,400 00	Do.
23	James L. Falbey	1,400	do	do	1,400 00	Pennsylvania.
24	James Fishback	1,400	do	do	1,400 00	Illinois.
25	Joseph Fought	1,400	do	do	1,400 00	Pennsylvania.
26	William Gadsby	1,400	do	do	1,400 00	Dist. of Columbia.
27	William L. Glass	1,400	do	do	1,400 00	Illinois.
28	Frank A. Happer ³	1,400	do	*May 9, 1886	528 57	} Pennsylvania
			May 10, 1886	Nov. 30, 1886	783 00	
					1,311 57	
29	James P. Hart	1,400	Dec. 1, 1885	do	1,400 00	Do.
30	Thomas Haslam	1,400	do	do	1,400 00	Do.
31	Thomas E. Hatch ⁴	1,400	do	do	1,373 37	New Hampshire.
32	Rudolph Heinrichs	1,400	do	do	1,400 00	Dist. of Columbia.
33	Henry A. Johnson	1,400	do	do	1,400 00	Pennsylvania.
34	John M. Keogh	1,400	do	do	1,400 00	New York.
35	Norval W. King	1,400	do	do	1,400 00	Dist. of Columbia.
36	William H. B. Kittson	1,400	do	do	1,400 00	New York.
37	Daniel E. Knapp	1,400	do	do	1,400 00	Do.
38	Charles A. Krause	1,400	do	do	1,400 00	Texas.
39	William T. Leport ³	1,400	do	Dec. 3, 1885	8 69	} New Jersey.
			Dec. 4, 1885	Nov. 30, 1886	1,389 52	
					1,398 21	
40	John Lepper	1,400	Dec. 1, 1885	do	1,400 00	Maryland.
41	Martin B. Lichty	1,400	do	do	1,400 00	Dist. of Columbia.
42	S. Dana Lincoln	1,400	do	do	1,400 00	Minnesota.
43	Francis G. Littlefield	1,400	do	do	1,400 00	Massachusetts.
44	James Loan	1,400	do	do	1,400 00	Pennsylvania.
45	George W. McKee	1,400	do	do	1,400 00	Do.
46	William D. Mack ⁵	1,400	do	do	1,392 39	Michigan.
47	Denis Maher	1,400	do	do	1,400 00	Dist. of Columbia.
48	John J. Meding	1,400	do	do	1,400 00	New York.

¹ Resigned.² Absent 4 days without pay.³ Promoted from Class 1.⁴ Absent without pay 7 days.⁵ Absent without pay 2 days.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 2—Continued.						
49	John W. Moore ¹	\$1,400	July 1, 1886	Nov. 30, 1886	\$583 00	Pennsylvania.
50	John O. Neill	1,400	Dec. 1, 1885	do	1,400 00	Dist. of Columbia
51	Henry C. Porter	1,400	do	do	1,400 00	New York.
52	St. George R. Raby	1,400	do	do	1,400 00	Do.
53	William H. B. Ramsay	1,400	do	do	1,400 00	Pennsylvania.
54	William T. Richardson	1,400	do	do	1,400 00	Dist. of Columbia.
55	John L. Robertson	1,400	do	do	1,400 00	New Jersey.
56	Burton R. Ross	1,400	do	do	1,400 00	Dist. of Columbia.
57	William Schreiber	1,400	do	do	1,400 00	Maryland.
58	Charles Shelse	1,400	do	do	1,400 00	Dist. of Columbia.
59	Charles Smith ²	1,400	do	do	1,284 78	Do.
60	Frederick H. Smith	1,400	do	do	1,400 00	Wisconsin.
61	Hubbard T. Smith	1,400	do	do	1,400 00	Indiana.
62	Edwin H. Spang	1,400	do	do	1,400 00	Pennsylvania.
63	William G. Spottswood	1,400	do	do	1,400 00	Do.
64	Benjamin D. Thomson	1,400	do	do	1,400 00	New Jersey.
65	James Toomey	1,400	do	do	1,400 00	Pennsylvania.
66	Edward Turkenton	1,400	do	do	1,400 00	Dist. of Columbia.
67	Gustave Walden	1,400	do	do	1,400 00	Maryland.
68	Wilmer W. Wetzel ³ {	1,400	do	Dec. 31, 1885	100 00	} Dist. of Columbia.
			Jan. 1, 1886	Nov. 30, 1886	1,283 00	
					1,383 00	
69	Lewis Williams	1,400	Dec. 1, 1885	do	1,400 00	Do.
	Charles Camper ⁴	1,400	do	Dec. 3, 1885	11 48	Maryland.
CLASS 1.						
1	Alexander Abrahams ⁵	100	do	Nov. 30, 1886	1,196 74	Alabama.
2	George B. Abrams	100	do	do	1,200 00	Vermont.
3	William J. Allen	100	do	do	1,200 00	Pennsylvania.
4	Alfred J. Anderson ⁶	100	do	do	1,186 95	Ohio.
5	Albert E. Angell	1,200	Jan. 26, 1886	Aug. 23, 1886	577 30	} Virginia.
			Aug. 24, 1881	Nov. 30, 1886	323 91	
					901 21	
6	George M. Arnold	1,200	Dec. 1, 1885	do	1,200 00	Do.
7	Thomas G. Ash	1,200	do	do	1,200 00	Kentucky.
8	William M. Ash	1,200	do	do	1,200 00	Pennsylvania.
9	William T. Asson	1,200	do	do	1,200 00	Do.
10	Henry E. Austin	1,200	do	do	1,200 00	Do.
11	William R. Bailey ⁷	1,200	do	do	1,151 09	Dist. of Columbia.
12	William Baird	1,200	do	do	1,200 00	West Virginia.
13	Augustus W. Ballard ⁸	1,200	do	do	1,180 43	Illinois.
14	Joseph S. Baner	1,200	do	do	1,200 00	Do.
15	Edgar A. Barnard	1,200	do	do	1,200 00	Michigan.
16	Hanson F. Barnard	1,200	do	do	1,200 00	Dist. of Columbia.
17	Charles J. Barrett	1,200	do	do	1,200 00	Pennsylvania.
18	James I. Barrick	1,200	do	do	1,200 00	West Virginia.
19	Richard F. Barter ⁹	1,200	do	do	1,157 14	Indiana.
20	Albert F. Bayard	1,200	do	do	1,200 00	New York.
21	Robert N. Bayles	1,200	do	do	1,200 00	New Jersey.
22	Everett S. Beall	1,200	do	do	1,200 00	Maryland.
23	Emory J. Bentley	1,200	do	do	1,200 00	Wisconsin.
24	Thomas Bevans	1,200	do	do	1,200 00	Missouri.
25	Frank W. Bird ¹	1,200	Mar. 1, 1886	do	903 33	Massachusetts.
26	Charles H. Bliss ¹⁰	1,200	Dec. 1, 1885	do	1,190 22	Illinois.
27	Joseph S. Bolway	1,200	do	do	1,200 00	New York.
28	Hugo Borbeck	1,200	do	do	1,200 00	Do.
29	John S. Bosworth	1,200	do	do	1,200 00	Iowa.
30	Thomas C. Bourne	1,200	do	do	1,200 00	New York.
31	Francis W. R. Braddock	1,200	do	do	1,200 00	Ohio.
32	Robert Braden	1,200	do	do	1,200 00	New York.
33	William R. Bradley	1,200	do	do	1,200 00	Do.
34	Daniel D. Brennan	1,200	do	do	1,200 00	Do.

¹ Transferred from Paymaster-General's Office.

² Absent 30 days without pay.

³ Promoted from Class 1.

⁴ Died December 3, 1885.

⁵ Absent 1 day without pay.

⁶ Absent 4 days without pay.

⁷ Absent 15 days without pay.

⁸ Absent 6 days without pay.

⁹ Absent 13 days without pay.

¹⁰ Absent 3 days without pay.

EMPLOYÉS OF THE WAR DEPARTMENT.

7

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
35	Wiley Britton ¹	\$1, 200	Oct. 5, 1886	Nov. 30, 1886	\$186 95	Kansas.
36	William G. Brock	1, 200	Dec. 1, 1885	do	1, 200 00	Dist. of Columbia.
37	Thomas Broderick	1, 200	do	do	1, 200 00	Do.
38	Edmund J. Brookings	1, 200	do	do	1, 200 00	Maine.
39	Samuel F. Brooks	1, 200	do	do	1, 200 00	Virginia.
40	Edward N. Brown	1, 200	do	do	1, 200 00	New York.
41	George O. Brown	1, 200	do	do	1, 200 00	Massachusetts.
42	James Brown	1, 200	do	do	1, 200 00	Dist. of Columbia.
43	Charles E. Brunthaver	1, 200	do	do	1, 200 00	Ohio.
44	George W. Bunker	1, 200	do	do	1, 200 00	Dist. of Columbia.
45	Fred. C. Burrhus	1, 200	do	do	1, 200 00	Iowa.
46	William S. Burton	1, 200	do	do	1, 200 00	Do.
47	George H. Byron	1, 200	do	do	1, 200 00	New York.
48	Jesse B. Caldwell ²	1, 200	do	do	1, 183 70	Indiana.
49	Alfred Cammack	1, 200	do	do	1, 200 00	Dist. of Columbia.
50	Thomas Campbell	1, 200	do	do	1, 200 00	South Carolina.
51	Thomas G. Carmick	1, 200	do	do	1, 200 00	California.
52	Edward C. Carroll	1, 200	do	do	1, 200 00	Maryland.
53	Orlando E. Caruana	1, 200	do	do	1, 200 00	New York.
54	James Caulfield	1, 200	do	do	1, 200 00	Do.
55	George H. Chadwick	1, 200	do	do	1, 200 00	Alabama.
57	Leonard C. Chew	1, 200	do	do	1, 200 00	Dist. of Columbia.
57	William H. Church	1, 200	do	do	1, 200 00	Iowa.
58	Daniel Clarke	1, 200	do	do	1, 200 00	Maryland.
59	Peter G. Clarke	1, 200	do	do	1, 200 00	Alabama.
60	Arthur E. Clifford ³	1, 200	Mar. 17, 1886	do	850 00	New Hampshire.
61	Alfred Cock ⁴	1, 200	Dec. 1, 1885	do	1, 196 70	Virginia.
62	Frederick W. Collins ⁵	1, 200	do	do	1, 102 18	New York.
63	James H. Colwell	1, 200	do	do	1, 200 00	Pennsylvania.
64	Charles G. Conger	1, 200	do	do	1, 200 00	Michigan.
65	Harry E. Copenhaver	1, 200	do	do	1, 200 00	Virginia.
66	Amasa Copp	1, 200	do	do	1, 200 00	New York.
67	Eugene P. Corvaizier ⁶	1, 200	Aug. 1, 1886	do	398 91	Do.
68	David Cranmer	1, 200	Dec. 1, 1885	do	1, 200 00	Do.
69	Roland F. Cromelin	1, 200	do	do	1, 200 00	Georgia.
70	Richard Cullen	1, 200	do	do	1, 200 00	Kansas.
71	Valentine H. Cuming	1, 200	do	do	1, 200 00	Dist. of Columbia.
72	James C. Cunegan	1, 200	do	do	1, 200 00	Illinois.
73	David Currier	1, 200	do	do	1, 200 00	New Hampshire.
74	Rinaldo G. Daniels	1, 200	do	do	1, 200 00	Minnesota.
75	Daniel D. Davidson	1, 200	do	do	1, 200 00	Dist. of Columbia.
76	Edward Y. Davidson ⁷	1, 200	Mar. 22, 1886	do	784 42	Virginia.
77	Francis S. Davidson	1, 200	Dec. 1, 1885	do	1, 200 00	Massachusetts.
78	Edward W. Davis	1, 200	do	do	1, 200 00	Dist. of Columbia.
79	William W. Davis	1, 200	do	do	1, 200 00	Do.
80	William M. Deck ⁸	1, 200	Jan. 29, 1886	Oct. 22, 1886	732 00	West Virginia.
			Oct. 23, 1886	Nov. 30, 1886	128 26	
					860 26	
81	Charles DeForrest	1, 200	Dec. 1, 1885	do	1, 200 00	New York.
82	Sidney H. Dent ⁹	1, 200	Jan. 21, 1886	Oct. 22, 1886	751 51	Texas.
			Oct. 23, 1886	Nov. 30, 1886	128 26	
					879 77	
83	John R. Dickson ¹⁰	1, 200	Dec. 1, 1885	June 30, 1886	818 00	Dist. of Columbia.
			July 1, 1886	Nov. 30, 1886	500 00	
					1, 318 00	
84	James Dodge	1, 200	Dec. 1, 1885	do	1, 200 00	Maryland.
85	Michael T. Dooley	1, 200	do	do	1, 200 00	South Carolina.
86	George E. Doughty	1, 200	do	do	1, 200 00	Indiana.
87	John B. Dowd ¹¹	1, 200	do	do	1, 195 05	Do.

¹ Appointed October 5, 1886.² Absent 5 days without pay.³ Appointed.⁴ Absent 1 day without pay.⁵ Absent 30 days without pay.⁶ Transferred from office Quartermaster-General.⁷ Absent 15 days without pay.⁸ Appointed January 29, 1886, at \$1,000; promoted to Class 1 October 23, 1886.⁹ Appointed January 21, 1886, at \$1,000; absent 1 day without pay; promoted to Class 1 October 23, 1886.¹⁰ Reduced from Class 2 July 1, 1886.¹¹ Absent 1½ days without pay.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
88	Addison T. Drake.....	\$1,200	Dec. 1, 1885	Nov. 30, 1886	\$1,200 00	Michigan.
89	Orville Drown.....	1,200	do	do	1,200 00	Vermont.
90	Charles L. Dubuar.....	1,200	do	do	1,200 00	Michigan.
91	Edward Duff.....	1,200	do	do	1,200 00	Pennsylvania.
92	Frank E. Du Paul.....	1,200	do	do	1,200 00	Michigan.
93	John M. Dwyer ¹	1,200	do	do	1,098 91	Indiana.
94	James G. Eastwood.....	1,200	do	do	1,200 00	Illinois.
95	Paul Eaton.....	1,200	do	do	1,200 00	Maine.
96	Frank Eichelberger.....	1,200	do	do	1,200 00	Kansas.
97	Benjamin M. Elliott.....	1,200	do	do	1,200 00	Indiana.
98	Carl A. Epping.....	1,200	do	do	1,200 00	Florida.
99	Charles Erwin.....	1,200	do	do	1,200 00	New York.
100	Albert M. Evans.....	1,200	do	do	1,200 00	Pennsylvania.
101	William T. Evans.....	1,200	do	do	1,200 00	Do.
102	Thomas Evers.....	1,200	do	do	1,200 00	New York.
103	Edward B. Eynon.....	1,200	do	do	1,200 00	Pennsylvania.
104	John F. Fallon.....	1,200	do	do	1,200 00	Dist. of Columbia.
105	Dudley W. Farlin.....	1,200	do	do	1,200 00	New York.
106	Henry Farrell.....	1,200	do	do	1,200 00	Dist. of Columbia.
107	Ernest A. Fenton.....	1,200	do	do	1,200 00	New York.
108	John W. Fenton.....	1,200	do	do	1,200 00	Do.
109	Albert B. Ferguson.....	1,200	do	do	1,200 00	Dist. of Columbia.
110	Louis C. Ferrell.....	1,200	do	do	1,200 00	Illinois.
111	Adolph H. Fiegenbaum.....	1,200	do	do	1,200 00	Iowa.
112	John Finn.....	1,200	do	do	1,200 00	Maryland.
113	Charles A. Fischer.....	1,200	do	do	1,200 00	Kentucky.
114	Roswell W. Fish ²	1,200	Apr. 3, 1886	do	793 41	Connecticut.
115	Louis M. Fitch.....	1,200	Dec. 1, 1885	do	1,200 00	Colorado.
116	Morris G. Fitch.....	1,200	do	do	1,200 00	New Hampshire.
117	William M. Fitzgerald.....	1,200	do	do	1,200 00	Tennessee.
118	Christian A. Fleetwood.....	1,200	do	do	1,200 00	Maryland.
119	Frank D. Fletcher.....	1,200	do	do	1,200 00	New York.
120	Frederick A. Fowler.....	1,200	do	do	1,200 00	Do.
121	Benjamin T. Franklin.....	1,200	do	do	1,200 00	Kentucky.
122	Aaron H. Frear.....	1,200	do	do	1,200 00	Wisconsin.
123	George B. French.....	1,200	do	do	1,200 00	Massachusetts.
124	Ricardo D. DeL. French.....	1,200	do	do	1,200 00	New York.
125	William H. French.....	1,200	do	do	1,200 00	Virginia.
126	Benjamin C. Gallup.....	1,200	do	do	1,200 00	Oregon.
127	Ethridge J. Garrison.....	1,200	do	do	1,200 00	Tennessee.
128	Charles W. Geddes.....	1,200	do	do	1,200 00	South Carolina.
129	Herman H. Gerdes.....	1,200	do	do	1,200 00	Dist. of Columbia.
130	Addison C. Getchell ³	1,200	May 18, 1886	do	645 00	Massachusetts.
131	Alonzo T. Getty.....	1,200	Dec. 1, 1885	do	1,200 00	Maryland.
132	Thomas F. Gibbs.....	1,200	do	do	1,200 00	Massachusetts.
133	George E. Giles ⁴	1,200	do	do	1,036 96	Wisconsin.
134	John J. Goode.....	1,200	do	do	1,200 00	Illinois.
135	Edward T. Goodrich.....	1,200	do	do	1,200 00	Dist. of Columbia.
136	Jacob Gotthilf.....	1,200	do	do	1,200 00	Do.
137	Ethelbert W. Grabill.....	1,200	do	do	1,200 00	Missouri.
138	William A. L. Gresham ⁵	1,200	do	do	1,180 43	Indiana.
139	William Griffin.....	1,200	do	do	1,200 00	New York.
140	Charles Hammond ⁶	1,200	Apr. 3, 1886	do	793 41	Do.
141	Charles S. Hart.....	1,200	Dec. 1, 1885	do	1,200 00	New Jersey.
142	Alfred Hartenstein.....	1,200	do	do	1,200 00	Dist. of Columbia.
143	John Hastings ⁷	1,200	do	do	1,183 70	New York.
144	William Hebrew.....	1,200	do	do	1,200 00	Pennsylvania.
145	Hugh R. Hedrick.....	1,200	do	do	1,200 00	Iowa.
146	John F. Henry.....	1,200	do	do	1,200 00	New York.
147	Lewis C. Herrick.....	1,200	do	do	1,200 00	Illinois.
148	Edward K. Hill.....	1,200	do	do	1,200 00	Maine.
149	Frank D. Hill ⁸	1,200	do	do	1,167 40	Minnesota.
150	James H. Hilton.....	1,200	do	do	1,200 00	Dist. of Columbia.
151	Samuel Hilton.....	1,200	do	do	1,200 00	Rhode Island.
152	William J. H. Hogan ⁹	1,200	do	do	1,193 41	Illinois.
153	Ernest B. Holcombe.....	1,200	do	do	1,200 00	New York.
154	Joseph H. C. Hollins.....	1,200	do	do	1,200 00	Dist. of Columbia.
155	Theodore Horn.....	1,200	do	do	1,200 00	Texas.
156	William S. Houghton.....	1,200	do	do	1,200 00	Massachusetts.
157	Martin Hoyberger.....	1,200	do	do	1,200 00	Virginia.

¹ Absent 31 days without pay.

² Transferred from office of Surgeon-General.

³ Transferred from Interior Department, and appointed May 18, 1886.

⁴ Absent 50 days without pay.

⁵ Absent 6 days without pay.

⁶ Transferred from Surgeon-General's Office, at \$1,000, and promoted same date.

⁷ Absent 5 days without pay.

⁸ Absent 10 days without pay.

⁹ Absent 2 days without pay.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS I—Continued.						
158	Frank R. Hubachek.....	\$1,200	Dec. 1, 1885	Nov. 30, 1886	\$1,200 00	Wisconsin.
159	Harry R. Hughes.....	1,200	do	do	1,200 00	Pennsylvania.
160	William T. Hughes.....	1,200	do	do	1,200 00	Ohio.
161	Rudolph Johnson ¹	1,200	do	do	1,186 96	Dist. of Columbia.
161	Charles W. Jones ²	1,200	Aug. 1, 1886	do	398 91	Michigan.
162	Richard C. Jones.....	1,200	Dec. 1, 1885	do	1,200 00	Dist. of Columbia.
163	Thomas H. Jones.....	1,200	do	do	1,200 00	Florida.
164	David C. Jordan.....	1,200	do	do	1,200 00	Missouri.
165	Robert A. Kantz.....	1,200	do	do	1,200 00	Pennsylvania.
166	Charles Katzenstein.....	1,200	do	do	1,200 00	Michigan.
167	Benjamin F. Keller.....	1,200	do	do	1,200 00	Pennsylvania.
168	Michael Kelly.....	1,200	do	Nov. 30, 1886	1,200 00	Dist. of Columbia.
169	Arthur D. Kerr.....	1,200	do	do	1,200 00	Maryland.
170	George H. Knapp.....	1,200	do	do	1,200 00	New York.
171	Gilbert C. Kniffen.....	1,200	do	do	1,200 00	Kentucky.
172	John M. Knowles ³	1,200	July 1, 1886	do	500 00	Dist. of Columbia.
173	Andrew J. Laird.....	1,200	Dec. 1, 1885	do	1,200 00	Georgia.
174	John L. Lake, jr.....	1,200	do	do	1,200 00	Mississippi.
175	Frank A. Lancaster.....	1,200	do	do	1,200 00	Massachusetts.
176	Samuel B. Latham ⁴	1,200	do	do	1,117 94	South Carolina.
177	William W. Lecture.....	1,200	do	do	1,200 00	Dist. of Columbia.
178	Alexander B. Legare.....	1,200	do	do	1,200 00	South Carolina.
179	Godfrey H. Leonard ⁵	1,200	do	do	1,177 13	Dist. of Columbia.
180	Orlando B. Lester ⁶	{ 1,200	do	Mar. 31, 1886	334 00	} Illinois.
			April 1, 1886	Nov. 30, 1886	800 00	
					1,134 00	
181	Exum P. Lewis.....	1,200	Dec. 1, 1885	do	1,200 00	North Carolina
182	William H. Lewis.....	1,200	do	do	1,200 00	Kansas.
183	John H. Lindley.....	1,200	do	do	1,200 00	Illinois.
184	George E. M. Liston.....	1,200	do	do	1,200 00	Indiana.
185	Alonzo T. Logan.....	1,200	do	do	1,200 00	Texas.
186	James A. Long.....	1,200	do	Nov. 30, 1886	1,200 00	Illinois.
187	Clifton Lowe.....	1,200	do	do	1,200 00	Iowa.
188	Amos Luke ⁷	{ 1,200	July 26, 1886	Nov. 17, 1886	277 17	} Ohio.
			Nov. 18, 1886	Nov. 30, 1886	43 48	
					320 65	
189	Edwin K. Lundy.....	1,200	Dec. 1, 1885	do	1,200 00	Pennsylvania.
190	Jere C. Lyons.....	1,200	do	do	1,200 00	Ohio.
191	Jeptha L. Lytton.....	1,200	do	do	1,200 00	Indiana.
192	John McCarthy.....	1,200	do	do	1,200 00	Dist. of Columbia.
193	Jay H. McFall ⁸	1,200	do	do	1,193 40	Wisconsin.
194	John L. McGee.....	1,200	do	do	1,200 00	West Virginia.
195	John M. E. McKee.....	1,200	do	do	1,200 00	Pennsylvania.
196	Jesse K. McKeever.....	1,200	do	do	1,200 00	Do.
197	Thomas McKernan.....	1,200	do	do	1,200 00	Dist. of Columbia.
198	Eugene McMichael.....	1,200	do	do	1,200 00	Mississippi.
199	Samuel McMonigle.....	1,200	do	do	1,200 00	Dist. of Columbia.
200	George W. McMorris.....	1,200	do	do	1,200 00	Pennsylvania.
201	Mahlon McMurphy ⁹	{ 1,200	do	Mar. 31, 1886	343 00	} Kentucky.
			Apr. 1, 1886	Nov. 30, 1886	800 00	
					1,134 00	
202	Dorsey M. McPherson.....	1,200	Dec. 1, 1885	do	1,200 00	Arizona.
203	Winfield S. Macgill.....	1,200	do	do	1,200 00	Maryland.
204	Frederick O. Mack.....	1,200	do	do	1,200 00	Dist. of Columbia.
205	Nathaniel M. Macrae.....	1,200	do	do	1,200 00	New Mexico.
206	Archibald B. MacSween.....	1,200	do	do	1,200 00	Michigan.
207	James F. Maguire.....	1,200	do	do	1,200 00	Pennsylvania.
208	Thomas Maloney.....	1,200	do	do	1,200 00	Dist. of Columbia.
209	Edward P. Masi.....	1,200	do	do	1,200 00	Wyoming.

¹ Absent 4 days without pay.² Transferred from office of Quartermaster-General.³ Transferred from office of Paymaster-General.⁴ Absent 25 days without pay.⁵ Absent 7 days without pay.⁶ Promoted from \$1,000 class.⁷ Transferred from office Surgeon-General July 16, 1886, at \$1,000, and promoted November 18, 1886. Absent 13 days without pay.⁸ Absent 2 days without pay.⁹ Promoted from \$1,000 class.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
210	Hugh Masterson.	\$1, 200	Dec. 1, 1885	Nov. 30, 1886	\$1, 200 00	Dist. of Columbia.
211	Thomas H. Matthews.	1, 200	do	do	1, 200 00	Pennsylvania.
212	Martin M. Mauger.	1, 200	do	do	1, 200 00	Do.
213	Gustavus B. Maynadier.	1, 200	do	do	1, 200 00	Dist. of Columbia.
214	Richard T. Meany.	1, 200	do	do	1, 200 00	Florida.
215	Wilbur F. Melbourne.	1, 200	do	do	1, 200 00	Missouri.
216	William H. Mellach.	1, 200	do	do	1, 200 00	New Jersey.
217	Eugene M. Merrick.	1, 200	do	do	1, 200 00	New York.
218	Squire G. Merrill.	1, 200	do	do	1, 200 00	Connecticut.
219	Paul B. Merritt.	1, 200	do	do	1, 200 00	Massachusetts.
220	Michael A. Mess ¹ {	1, 200	Feb. 4, 1886	Aug. 31, 1886	497 94	} Indiana.
			Aug. 4, 1886	Nov. 30, 1886	389 12	
					887 06	
221	Adolph Meyer.	1, 200	Dec. 1, 1885	do	1, 200 00	Dist. of Columbia.
222	Benjamin F. Miller.	1, 200	do	do	1, 200 00	New York.
223	N. Bryson Milliken.	1, 200	do	do	1, 200 00	Maine.
224	John Mitchell.	1, 200	do	do	1, 200 00	Dist. of Columbia.
225	Robert H. Mitchell ² {	1, 200	do	do	1, 193 48	Do.
226	Samuel C. Mitchell ³ {	1, 200	Feb. 10, 1886	July 31, 1886	473 13	} Iowa.
			Aug. 1, 1886	Nov. 30, 1886	398 91	
					872 04	
227	Fred. G. Moffatt.	1, 200	Dec. 1, 1885	do	1, 200 00	New York.
228	Frederick M. P. Montague.	1, 200	do	do	1, 200 00	Virginia.
229	David Moody.	1, 200	do	do	1, 200 00	Ohio.
230	Lewis M. Mooers.	1, 200	do	do	1, 200 00	Iowa.
231	Laurence Morisey.	1, 200	do	do	1, 200 00	Dist. of Columbia.
232	Henry Morris.	1, 200	do	do	1, 200 00	Delaware.
233	Hiram B. Morse ⁴ {	1, 200	do	do	1, 180 43	Illinois.
234	George T. Morton.	1, 200	do	do	1, 200 00	Kentucky.
235	William Mulhall.	1, 200	do	do	1, 200 00	Maryland.
236	Seaton Munroe.	1, 200	do	do	1, 200 00	Dist. of Columbia.
237	James G. Naylor, jr.	1, 200	do	do	1, 200 00	Do.
238	John B. Nesbitt.	1, 200	do	do	1, 200 00	Do.
239	William E. Newman.	1, 200	do	do	1, 200 00	Vermont.
240	James G. Nokes ⁵ {	1, 200	do	Feb. 15, 1886	211 78	} Dist. of Columbia.
			Feb. 16, 1886	Nov. 30, 1886	946 66	
					1, 158 44	
241	John L. Norris.	1, 200	Dec. 1, 1885	do	1, 200 00	Maryland.
242	Dennis O'Connor ⁶ {	1, 200	do	do	1, 111 75	Vermont.
243	Martin O'Connor.	1, 200	do	do	1, 200 00	Dist. of Columbia.
244	Richard O'Dowd.	1, 200	do	do	1, 200 00	Virginia.
245	George F. O'Hair.	1, 200	do	do	1, 200 00	Indiana.
246	Joseph A. O'Neill.	1, 300	do	do	1, 200 00	Pennsylvania.
247	Charles H. Ourand ⁷ {	1, 200	Apr. 9, 1886	do	773 63	Louisiana.
248	Henry Page.	1, 200	Dec. 1, 1885	do	1, 200 00	Illinois.
249	Frank W. Paige.	1, 200	do	do	1, 200 00	Dist. of Columbia.
250	Clinton C. Palmer.	1, 200	do	do	1, 200 00	Kansas.
251	Thomas M. Pancoast.	1, 200	do	do	1, 200 00	Ohio.
252	Frank E. Park ⁸ {	1, 200	July 1, 1886	do	500 00	Indiana.
253	William W. Parker.	1, 200	Dec. 1, 1885	do	1, 200 00	Maryland.
254	Charles L. Patten.	1, 200	do	do	1, 200 00	Maine.
255	Nathaniel S. Paul.	1, 200	do	do	1, 200 00	Indiana.
256	Edwin H. Pearson.	1, 200	do	do	1, 200 00	West Virginia.
257	Constantine Perez, jr.	1, 200	do	do	1, 200 00	Alabama.
258	Charles E. Persons.	1, 200	do	do	1, 200 00	Vermont.
259	Joseph W. Piles.	1, 200	do	do	1, 200 00	Missouri.
260	William Platt.	1, 200	do	do	1, 200 00	Iowa.
261	Henry J. Playter.	1, 200	do	do	1, 200 00	Massachusetts.
262	Frank Plunkett.	1, 200	do	do	1, 200 00	Do.

¹ Appointed February 4, 1886 at \$1,000; promoted to Class 1 August 4, 1886.

² Absent 2 days without pay.

³ Appointed February 10, 1886, at \$1,000; promoted to Class 1 August 1, 1886.

⁴ Absent 6 days without pay.

⁵ Promoted February 16, 1886, from Class \$1,000.

⁶ Absent 27 days without pay.

⁷ Appointed April 9, 1886.

⁸ Transferred from office of Publication of Records of Rebellion.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
263	Georg F. Pollock ¹ {	\$1, 200	Jan. 25, 1886 Aug. 1, 1886	July 31, 1886 Nov. 30, 1886	\$517 57 398 91 916 48	Ohio.
264	Mouina G. Porter	1, 200	Dec. 1, 1885	do	1, 200 00	
265	William M. Potter	1, 200	do	do	1, 200 00	At large. Pennsylvania.
266	Alexis L. Pratt ² {	1, 200	July 26, 1886 Aug. 1, 1886	July 31, 1886 Nov. 30, 1886	16 30 398 91 415 21	California.
267	Frederick C. Pratz	1, 200	May 22, 1886	do	631 97	
268	Andrew D. Pryal ³ {	1, 200	Dec. 1, 1885 Jan. 11, 1886	Jan. 10, 1886 Nov. 30, 1886	111 78 1, 066 67 1, 178 45	California.
269	A. Emmett Randle ⁴ {	1, 200	Apr. 26, 1886 Aug. 1, 1886	July 31, 1886 Nov. 30, 1886	265 56 398 91 664 47		Mississippi.
270	Joseph Rapp	1, 200	Dec. 1, 1885	do	1, 200 00	West Virginia.
271	Augustus H. Raymond	1, 200	do	do	1, 200 00	Wisconsin.
272	John G. Reeves	1, 200	do	do	1, 200 00	Illinois.
273	Jacob H. Richardson	1, 200	do	do	1, 200 00	Ohio.
274	William Ricketts ⁵	1, 200	July 1, 1886	do	500 00	Dist. of Columbia.
275	George W. Riggles	1, 200	Dec. 1, 1885	do	1, 200 00	Do.
276	Edgar Robinson	1, 200	do	do	1, 200 00	New York.
277	George W. Roby	1, 200	do	do	1, 200 00	Maryland.
278	Andrew C. Ronne	1, 200	do	do	1, 200 00	Dist. of Columbia.
279	Arthur W. Rose ⁶	1, 200	do	do	1, 193 40	New Jersey.
280	George E. Ross	1, 200	do	do	1, 200 00	Ohio.
281	George M. Rowe	1, 200	do	do	1, 200 00	Colorado.
282	Isaac B. Ruff	1, 200	do	do	1, 200 00	Michigan.
283	George M. Russell.....	1, 200	do	do	1, 200 00	Pennsylvania.
284	James Sabine	1, 200	do	do	1, 200 00	Massachusetts.
285	Eben D. Safford	1, 200	do	do	1, 200 00	New York.
286	Philip R. R. M. Sattes	1, 200	do	do	1, 200 00	Ohio.
287	Henry Schulz	1, 200	do	do	1, 200 00	Dist. of Columbia.
288	William M. Sefton	1, 200	do	do	1, 200 00	Do.
289	John H. Seiffert	1, 200	do	do	1, 200 00	Do.
290	Harvel M. Shannon	1, 200	do	do	1, 200 00	Illinois.
291	John Shea	1, 200	do	do	1, 200 00	Dist. of Columbia.
292	George M. Smith, No. 1	1, 200	do	do	1, 200 00	West Virginia.
293	George M. Smith, No. 2.....	1, 200	do	do	1, 200 00	Maryland.
294	Harry J. Smith	1, 200	do	do	1, 200 00	Dist. of Columbia.
295	Henry A. Smith	1, 200	do	do	1, 200 00	Massachusetts.
296	John T. Smith	1, 200	do	do	1, 200 00	Indiana.
297	William R. Smith, sr	1, 200	do	do	1, 200 00	New York.
298	Joseph Smolinski	1, 200	do	do	1, 200 00	Dist. of Columbia.
299	Francis Soevyn	1, 200	do	do	1, 200 00	New York.
300	William T. Spencer	1, 200	do	do	1, 200 00	Iowa.
301	Fred C. Squires	1, 200	do	do	1, 200 00	Michigan.
302	Edward C. Stackpole ⁷	1, 200	do	do	1, 095 66	California.
303	Charles M. Staley	1, 200	do	do	1, 200 00	Illinois.
304	Jacob W. Starr	1, 200	do	do	1, 200 00	New Jersey.
305	Charles B. Steele ⁸	1, 200	do	do	1, 170 58	Michigan.
306	James A. Stewart	1, 200	do	do	1, 200 00	Pennsylvania.
307	Charles A. Stockett	1, 200	do	do	1, 200 60	Dist. of Columbia.
308	William B. Stokes	1, 200	do	do	1, 200 00	Indiana.
309	Julius Stommel	1, 200	do	do	1, 200 00	New Jersey.
310	Harlow L. Street	1, 200	do	do	1, 200 00	California.
311	Isaac Strohm	\$1, 200	do	do	1, 200 00	Ohio.
312	Benjamin W. Summy	1, 200	do	do	1, 200 00	Dist. of Columbia.
313	Charles E. Sumner ⁹	1, 200	do	do	1, 146 74	Michigan.
314	George W. Talburtt	1, 200	do	do	1, 200 00	Kentucky.

¹ Appointed January 25, 1886, at \$1,000; promoted to Class 1 August 1, 1886.² Transferred from office Surgeon-General July 26, 1886, at \$1,000; promoted August 1, 1886.³ Promoted from Class \$1,000.⁴ Appointed April 26, 1886, at \$1,000; promoted August 1, 1886.⁵ Transferred from office of Publication of Records of Rebellion July 1, 1886.⁶ Absent 2 days without pay.⁷ Absent 31 days without pay.⁸ Absent 9 days without pay.⁹ Absent 16 days without pay.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
315 316	{ Walter I. Taylor ¹ }	----- \$1, 200	May 3, 1886	July 31, 1886	\$246 33	{ Louisiana.
			Aug. 1, 1886	Nov. 30, 1886	398 91	
					645 24	
317	Edwin G. Temple.....	1, 200	Dec. 1, 1885	do	1, 200 00	Wisconsin.
318	Orville D. Thatcher.....	1, 200	do	do	1, 200 00	Minnesota.
319	Henry C. Thomas.....	1, 200	do	do	1, 200 00	Dist. of Columbia.
320	Samuel C. Thompson	1, 200	do	do	1, 200 00	Pennsylvania.
321	Smith Thompson	1, 200	do	do	1, 200 00	Maryland.
322	Abert Thomson	1, 200	do	do	1, 200 00	Florida.
323	William J. R. Thönssen ² ..	1, 200	Apr. 5, 1886	do	786 81	Texas.
324	Ashton Todd	1, 200	Dec. 1, 1885	do	1, 200 00	Virginia.
325	Richard B. Travers.....	1, 200	do	do	1, 200 00	Dist. of Columbia.
326	Charles E. Troutman	1, 200	do	do	1, 200 00	Pennsylvania.
327	Henry Turnbull	1, 200	do	do	1, 200 00	Dist. of Columbia.
328	Rudolph Ullmer	1, 200	do	do	1, 200 00	Do.
329	Charles R. Von Romondt..	1, 200	do	do	1, 200 00	New Jersey.
330	George W. Waite	1, 200	do	do	1, 200 00	Nevada.
331	Robert J. Walker ³	1, 200	do	do	1, 196 75	Massachusetts.
332	Charles O. Walkup	1, 200	do	do	1, 200 00	New York.
333	John C. Wall	1, 200	do	do	1, 200 00	Do.
334	J. William Wallace.....	1, 200	do	do	1, 200 00	Massachusetts.
335	Wilkins T. Wallace.....	1, 200	do	do	1, 200 00	Mississippi.
336	Thomas H. Walsh	1, 200	do	do	1, 200 00	New York.
337	Clifford S. Walton ⁴	1, 200	do	do	1, 076 09	Michigan.
338	John B. Warder.....	1, 200	do	do	1, 200 00	Dist. of Columbia.
339	Samuel R. Warren.....	1, 200	do	do	1, 200 00	New York.
340	David S. Waters.....	1, 200	do	do	1, 200 00	Kentucky.
341	Stanton Weaver.....	1, 200	do	do	1, 200 00	Ohio.
342	Philip H. Weber	1, 200	do	do	1, 200 00	Dist. of Columbia.
343	Granville C. West	1, 200	do	do	1, 200 00	Kansas.
344	Harman C. Westervelt.....	1, 200	do	do	1, 200 00	New York.
345	Edmund Weston ⁵	1, 200	do	do	1, 186 96	Vermont.
346	George F. Wetzrich.....	1, 200	do	do	1, 200 00	Dist. of Columbia.
347	Gustavus A. Whitcomb....	1, 200	do	do	1, 200 00	Minnesota.
348	Nathan F. White	1, 200	do	do	1, 200 00	Connecticut.
349	Oscar W. White ⁶	1, 200	do	do	1, 193 48	Pennsylvania.
350	Alexander S. Whiteside ..	1, 200	do	do	1, 200 00	Maryland.
351	Arthur P. Whitney.....	1, 200	do	do	1, 200 00	New York.
352	Arthur Wilcker	1, 200	do	do	1, 200 00	Dist. of Columbia.
353	George J. P. Wood	1, 200	do	do	1, 200 00	Indiana.
354	Herbert E. Woodward ⁷ ..	1, 200	Apr. 12, 1886	do	763 74	New York.
355	Sanford B. Woodward ⁸	1, 200	Dec. 1, 1886	do	1, 180 37	New Hampshire.
356	James M. Wright, jr.	1, 200	do	do	1, 200 00	Dist. of Columbia.
357	George A. Young	1, 200	do	do	1, 200 00	Do.
358	Claude R. Zappone	1, 200	do	do	1, 200 00	Georgia.
(a)	Christian Anderson.....	1, 200	do	Mar. 25, 1886	380 00	New Jersey.
(b)	William L. Barrington.....	1, 200	do	Jan. 27, 1886	190 00	Illinois.
(b)	Henry B. Bayly	1, 200	do	Jan. 15, 1886	150 00	Do.
(b)	J. Orme Bawner.....	1, 200	do	June 5, 1886	617 58	Dist. of Columbia.
(c)	John C. Burnet.....	1, 200	do	June 21, 1886	670 33	Ohio.
(b)	Henry Carey	1, 200	do	May 1, 1886	502 20	Pennsylvania.
(d)	John A. Evans.....	1, 200	do	Mar. 19, 1886	360 00	Wisconsin.
(a)	Arthur Foster	1, 200	do	Jan. 26, 1886	186 67	Maryland.
(b)	Louis J. Garesche ⁹	1, 200	do	Aug. 2, 1886	781 52	Missouri.
(b)	Albert S. Grandy	1, 200	do	June 17, 1886	657 14	North Carolina.
(b)	Charles L. Grannis, jr.	1, 200	do	Aug. 4, 1886	814 13	Minnesota.
(a)	William Haines	1, 200	do	May 29, 1886	594 50	New Hampshire.
(c)	William Heyn ⁸	1, 200	Dec. 1, 1885	July 21, 1886	748 70	Dist. of Columbia.
(a)	Florence McCarthy.....	1, 200	do	Mar. 29, 1886	393 34	Do.
(c)	Edward E. Neal	1, 200	do	Apr. 17, 1886	456 04	Indiana.
(a)	Willoughby North.....	1, 200	do	Oct. 14, 1886	1, 045 65	New York.
(b)	George F. Noyes	1, 200	do	Sept. 5, 1886	918 48	Maine.
(b)	Thomas U. Raymond	1, 200	do	July 6, 1886	719 57	Indiana.
(c)	Richard Ricketts	1, 200	do	June 30, 1886	700 00	Dist. of Columbia.
(a)	Joachim H. Siddons.....	1, 200	do	Mar. 14, 1886	343 34	Do.
(b)	George B. Simrall.....	1, 200	do	May 15, 1886	548 35	Mississippi.

¹ Appointed May 3, 1886, at \$1,000; promoted August 1, 1886.

² Transferred from office Surgeon-General, at \$1,000, April 5, 1886, and promoted same day.

³ Absent 1 day without pay.

⁴ Absent 38 days without pay.

⁵ Absent 4 days without pay.

⁶ Absent 2 days without pay.

⁷ Appointed April 12, 1886.

⁸ Absent 6 days without pay.

⁹ Absent 8 days without pay.

(a) Died.

(b) Resigned.

(c) Discharged.

(d) Transferred to office of Inspector-General.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
(a)	Samuel Snow	1,200	Dec. 1, 1885	Jan. 21, 1886	170 00	Connecticut.
(b)	Fred Webber	1,200	do	Mar. 31, 1886	400 00	Kentucky.
(b)	Roger W. Winchell ¹	1,200	do	Aug. 25, 1886	832 61	Kansas.
CLASS C.						
1	Samuel J. Armstrong ²	\$1,000	July 24, 1886	Nov. 30, 1886	\$353 50	Pennsylvania.
2	Charles Forbes ³	1,000	Dec. 1, 1885	do	1,000 00	New York.
3	Frederick W. Grossart	1,000	Sept. 7, 1886	do	231 22	California.
4	William A. Kinnan ⁴	1,000	Oct. 29, 1886	do	89 91	Michigan.
5	Mary E. Lee	1,000	July 16, 1886	do	375 24	Illinois.
6	James B. McGettigan ⁵	1,000	Nov. 9, 1886	do	60 02	Pennsylvania.
7	Ronald McDonald ⁶	1,000	Oct. 22, 1886	.. do	81 76	New York.
8	James Nelson ⁷	1,000	Sept. 16, 1886	do	206 76	Montana.
9	Sterling Ruffin	1,000	Sept. 8, 1886	do	228 50	North Carolina.
10	William A. Scott	1,000	Dec. 1, 1885	do	1,000 00	Dist. of Columbia.
11	Robert R. Selden	1,000	do	do	1,000 00	Do.
12	Henry J. Wallis	1,000	Sept. 17, 1885	do	204 04	Georgia.
13	Nathaniel T. Worley ⁸	1,000	Nov. 18, 1886	.. do	35 57	Tennessee.
*	Peter D. Smith	1,000	Dec. 1, 1885	Dec. 31, 1885	84 00	Indiana.
Messengers.						
1	Stephen Kane	840	do	Nov. 30, 1886	840 00	Dist. of Columbia.
2	James McGilton	840	do	do	840 00	Do.
3	Jacob Madert	840	do	do	840 00	Do.
4	Edward Quade	840	do	do	840 00	Do.
5	Lindsey Winslow	840	do	do	840 00	Virginia.
Assistant messengers.						
1	Joseph Allen	720	do	do	720 00	Dist. of Columbia.
2	James O. Rampfield	720	do	do	720 00	South Carolina.
3	Michael Bowles	720	do	do	720 00	Pennsylvania.
4	Nelson T. Burch	720	do	do	720 00	Virginia.
5	Joseph Clements	720	do	do	720 00	Dist. of Columbia.
6	John Connelly	720	do	do	720 00	Do.
7	Michael Connolly	720	do	do	720 00	Army.
8	Ross Cunningham ⁹	720	July 14, 1886	do	274 57	Pennsylvania.
9	Charles B. Davis	720	Dec. 1, 1885	.. do	720 00	Dist. of Columbia.
10	Charles J. Giers	720	do	do	720 00	Alabama.
11	William Gill	720	do	do	720 00	Dist. of Columbia.
12	William T. Golden	720	do	do	720 00	Tennessee.
13	Septemius T. Graham	720	do	do	720 00	Kansas.
14	August Grimm	720	do	do	720 00	Dist. of Columbia.
15	Michael J. Hewston	720	do	do	720 00	Do.
16	Benjamin Jacobs	720	do	do	720 00	Do.
17	Morris Keim	720	do	do	720 00	Virginia.
18	John Kelly	720	do	do	720 00	Dist. of Columbia.
19	Daniel Killigan	720	do	do	720 00	Do.
20	Charles Kober	720	do	do	720 00	Illinois.
21	John C. Kohler	720	do	do	720 00	California.
22	Frederick Landgraf	720	do	do	720 00	Dist. of Columbia.
23	Patrick Larkin	720	do	do	720 00	Do.
24	George W. Leonard	720	do	do	720 00	Indiana.
25	Harmon T. Lord	720	do	do	720 00	New Jersey.
26	John T. McKeon ¹⁰	720	Dec. 14, 1885	do	695 22	Dist. of Columbia.
27	Lewis J. Melchior	720	Dec. 1, 1885	do	720 00	Maryland.
28	Andrew Mills	720	do	do	720 00	Dist. of Columbia.
29	Matthew Murphy	720	do	do	720 00	Do.
30	James Noonan	720	do	do	720 00	Do.
31	John O'Hagan	720	do	do	720 00	Do.
32	Alexander Oglesby	720	do	do	720 00	Virginia.
33	James Palmer	720	do	do	720 00	Do.
34	Edwin D. Perkins	720	do	do	720 00	Dist. of Columbia.
35	William H. Pike	720	do	do	720 00	Massachusetts.
36	Thomas W. Piper	720	do	do	720 00	Ohio.

^a Transferred to office Secretary of War.

^b Resigned.

^c Probationary appointment expired.

¹ Absent 15 days without pay.

² Transferred from office Surgeon-General.

³ Absent 1 day without pay.

⁴ Appointed October 29, 1886.

⁵ Appointed November 9, 1886.

⁶ Appointed October 22, 1886, absent ten days without pay.

⁷ Appointed September 16, 1886.

⁸ Transferred from office Surgeon-General, November 18, 1886.

⁹ Appointed July 16, 1886.

¹⁰ Transferred from office Secretary of War, December 14, 1885.

Statement showing the names, compensation, &c., of clerks, messengers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
Assistant Messengers—Con'd.						
37	James Plant.....	\$720	Dec. 1, 1885	Nov. 30, 1886	\$720 00	Dist. of Columbia.
38	Robert L. Reading.....	720	do	do	720 00	California.
39	James Richardson.....	720	do	do	720 00	Dist. of Columbia.
40	George R. Rowan.....	720	do	do	720 00	New York.
41	Ira G. Scott.....	720	do	do	720 00	California.
42	James T. Shackelford.....	720	do	do	720 00	Alabama.
43	George H. Short.....	720	do	do	720 00	Dist. of Columbia.
44	James H. Smith.....	720	do	do	720 00	Virginia.
45	Richard W. Spain.....	720	do	do	720 00	Dist. of Columbia.
46	George W. Thomas.....	720	do	do	720 00	Do.
47	George M. Thompson.....	720	do	do	720 00	Virginia.
48	Thomas S. Tune.....	720	do	do	720 00	Dist. of Columbia.
49	John Weidman.....	720	do	do	720 00	Do.
50	John Widmire.....	720	do	do	720 00	Do.
51	Thomas Wynne.....	720	do	do	720 00	Do.
	John Malone ¹	720	do	June 22, 1886	404 18	New Jersey.
Watchmen.						
1	John Anderson.....	720	do	Nov. 30, 1886	720 00	Pennsylvania.
2	Alphonso W. Bogia.....	720	do	do	720 00	Delaware.
3	Daniel Carson.....	720	do	do	720 00	Maryland.
4	Michael Cavanaugh.....	720	do	do	720 00	New York.
5	James F. Cullen.....	720	do	do	720 00	Tennessee.
6	William B. Denny.....	720	do	do	720 00	New York.
7	John H. Dowell ²	720	Nov. 5, 1886	do	51 52	Dist. of Columbia.
8	Adam Fraber.....	720	Dec. 1, 1885	do	720 00	Kentucky.
9	William H. Goodacre.....	700	do	do	720 00	Maryland.
10	Charles A. Lang ³	720	May 11, 1886	do	400 88	Wisconsin.
11	Solomon H. Lomax.....	720	Dec. 1, 1885	do	720 00	Virginia.
12	Nicholas McGowan.....	720	do	do	720 00	Dist. of Columbia.
13	James McGrath.....	720	do	do	720 00	Ohio.
14	Morgan McInerney.....	720	do	do	720 00	Dist. of Columbia.
15	Charles E. Murray.....	720	do	do	720 00	Do.
16	Thomas W. Sims.....	720	do	do	720 00	Do.
17	William Waters.....	720	do	do	720 00	New York.
18	Reuben M. Whitney.....	720	do	do	720 00	Maryland.
19	Samuel Wills.....	720	do	do	720 00	Virginia.
20	Theodore Winn.....	720	do	do	720 00	Massachusetts.
	Henry T. Moore ⁴	720	do	Apr. 29, 1886	299 76	Pennsylvania.
	Edward F. Owen ⁵	720	Dec. 3, 1885	Oct. 31, 1886	657 39	Dist. of Columbia.
Laborers.						
1	Manuel Jones.....	660	Dec. 1, 1885	Nov. 30, 1886	660 00	Virginia.
2	Michael Keating.....	660	Aug. 17, 1886	do	190 70	Massachusetts.
3	Henry Thompson.....	660	Dec. 1, 1885	do	660 00	Dist. of Columbia.
	Josiah S. Green ⁶	660	do	Aug. 17, 1886	469 29	South Carolina.

¹ Died.

³ Appointed May 11, 1886.

⁵ Died October 31, 1886.

² Appointed November 5, 1886.

⁴ Died April 29, 1886.

⁶ Transferred to building corner 17th and F.

Statement showing the names, compensation, &c., of clerks, messengers, laborers, and watchmen employed in the office of the Inspector-General from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 4.						
1	Warren H. Orcutt..	\$1, 800	Dec. 1, 1885	Nov. 30, 1886	\$1, 800 00	Army.
CLASS 1.						
2	Charles W. Greene ¹	1, 200	do..	Feb. 7, 1886	226 66	Pennsylvania.
3	John A. Evans ²	1, 200	Mar. 20, 1886	Nov. 30, 1886	840 00	Wisconsin.
<i>Assistant messenger.</i>						
4	John Connolly.....	720	Dec. 1, 1885	do.....	720 00	Dist. of Columbia.

¹ Died February 7, 1886.

² Transferred from Adjutant-General's Office, March 20, 1886.

Statement showing the names, compensation, &c., of clerks, copyist, and messengers employed in the Judge-Advocate-General's Office, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
	CLASS 4. Chief clerk.					
1	Thomas Duke	\$1,800	Dec. 1, 1885	Nov. 30, 1886	\$1,800	Army.
	CLASS 3. Clerks.					
2	Francis G. Saxton.....	1,600	do	do	1,600	Illinois.
3	Samuel Jones.....	1,600	do	do	1,600	Virginia.
	CLASS 1.					
4	Thomas Sprague.....	1,200	do	do	1,200	Indiana.
5	John P. Simonton.....	1,200	do	do	1,200	Do.
6	Cyrus Chambers	1,200	do	do	1,200	Iowa.
7	John J. Snodgrass	1,200	do	do	1,200	Pennsylvania.
	CLASS C.					
8	May Morrison	1,000	do	do	1,000	Dist. of Columbia.
	CLASS D. Copyist.					
9	Frank B. Walker	900	do	do	900	Ohio.
	Messenger.					
10	John Tennyson	840	do	do	840	Dist. of Columbia.
	Assistant messenger.					
11	Michael F. Denney.....	720	do	do	720	Massachusetts.

Statement showing the names of clerks and other persons employed in the office of the Quartermaster-General, U. S. Army, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
	CLASS B. Chief clerk.					
1	J. Z. Dare	\$2,000	Dec. 1, 1885	Nov. 30, 1886	\$2,000 00	Pennsylvania.
	CLASS 4.					
2	George K. Finckel.....	1,800	do	do	1,800 00	Dist. of Columbia.
3	A. W. Lattimore	1,800	do	do	1,800 00	Indiana.
4	Thomas W. Webster	1,800	do	do	1,800 00	Maryland.
5	Charles Ebert.....	1,800	do	do	1,800 00	New York.
6	Albert Gaines	1,800	do	do	1,800 00	Maine.
7	Fred. A. Gee ¹	1,800	do	do	1,515 31	New York.
8	George E. Davis.....	1,800	do	do	1,800 00	Pennsylvania.
9	Henry D. Saxton	1,800	do	do	1,800 00	Massachusetts.
10	Francis M. Schreiner	1,800	do	do	1,800 00	Dist. of Columbia.
	CLASS 3.					
11	William H. Hodges.....	1,600	do	do	1,600 00	New Jersey.
12	George Marsh	1,600	do	do	1,600 00	Illinois.

¹ Absent 58 days without pay.

Statement showing the names of clerks and other persons employed, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 3--Continued.						
13	John M. Grahame	\$1,600	Dec. 1, 1885	Nov. 30, 1886	\$1,600 00	Maryland.
14	Benjamin A. Farless ¹	1,600	do	do	1,595 66	New York.
15	Henry W. Smith	1,600	do	do	1,600 00	Do.
16	Henry B. Fernald	1,600	do	do	1,600 00	Massachusetts.
17	Henry P. Viles	1,600	do	do	1,600 00	Dist. of Columbia.
18	John H. Pickell	1,600	do	do	1,600 00	New York.
19	Robert Armour	1,600	do	do	1,600 00	Do.
20	H. H. Parmenter	1,600	do	do	1,600 00	Massachusetts.
21	George W. Callahan	1,600	do	do	1,600 00	Pennsylvania.
22	A. H. Morrison ²	1,600	do	do	1,471 15	Missouri.
CLASS 2.						
23	Noah H. Martin	1,400	do	do	1,400 00	Pennsylvania.
24	B. J. O'Driscoll	1,400	do	do	1,400 00	New York.
25	William H. Burnett	1,400	do	do	1,400 00	Iowa.
26	Louis Galeski	1,400	do	do	1,400 00	New York.
27	James Williamson	1,400	do	do	1,400 00	Pennsylvania.
28	Samuel M. Thatcher	1,400	do	do	1,400 00	Do.
29	John B. Pearce	1,400	do	do	1,400 00	Ohio.
30	A. W. Ogden	1,400	do	do	1,400 00	New York.
31	A. Y. Leech	1,400	do	do	1,400 00	Dist. of Columbia.
32	Edward Flagg	1,400	do	do	1,400 00	Massachusetts.
33	Thomas Montgomery	1,400	do	do	1,400 00	New York.
34	I. N. Thornburg	1,400	do	do	1,400 00	West Virginia.
35	Frank H. Evans	1,400	do	do	1,400 00	New Hampshire.
36	John D. Creighton	1,400	do	do	1,400 00	Massachusetts.
37	L. F. Randolph	1,400	do	do	1,400 00	New York.
38	Charles W. Hills	1,400	do	do	1,400 00	Ohio.
39	Francis McLean	1,400	do	do	1,400 00	New York.
40	Emma D. Sedgwick ³	1,400	do	do	1,398 10	Connecticut.
41	Edward C. Townsend	1,400	do	do	1,400 00	New York.
42	William Ryan	1,400	do	do	1,400 00	Nebraska.
43	James F. Dooley	1,400	do	do	1,400 00	Dist. of Columbia.
44	Michael Manning	1,400	do	do	1,400 00	New York.
45	Irving B. Dudley ⁴	1,400	do	do	1,266 16	Wisconsin.
CLASS 1.						
46	L. F. Fix ⁵	1,200	do	do	1,198 60	Ohio.
47	Lewis B. Parker	1,200	do	do	1,200 00	South Carolina.
48	James S. Franklin	1,200	do	do	1,200 00	Pennsylvania.
49	William Ludgate	1,200	do	do	1,200 00	New York.
50	James McMahon	1,200	do	do	1,200 00	Do.
51	D. W. Cleaver	1,200	do	do	1,200 00	Iowa.
52	William B. Johnson	1,200	do	do	1,200 00	Ohio.
53	John A. Botts	1,200	do	do	1,200 00	Dist. of Columbia.
54	Lizzie A. Richardson	1,200	do	do	1,200 00	New Hampshire.
55	Emily Ring	1,200	do	do	1,200 00	New York.
56	W. S. McFarlan	1,200	do	do	1,200 00	Dist. of Columbia.
57	Ettie Van Hook	1,200	do	do	1,200 00	Do.
58	Luke Derlin	1,200	do	do	1,200 00	Do.
59	Marcia Richardson	1,200	do	do	1,200 00	Michigan.
60	E. T. Cowperthwaite	1,200	do	do	1,200 00	Pennsylvania.
61	Ida Allen	1,200	do	do	1,200 00	Dist. of Columbia.
62	Caroline Sherman	1,200	do	do	1,200 00	Virginia.
63	E. S. Gurley ⁵	1,200	do	do	1,198 60	Iowa.
64	Mary L. Davidson	1,200	do	do	1,200 00	Maryland.
65	James S. Wilson	1,200	do	do	1,200 00	Dist. of Columbia.
66	J. J. Pratt	1,200	do	do	1,200 00	New York.
67	Frank O. Ball	1,200	do	do	1,200 00	Wisconsin.
68	Helen J. Paulding	1,200	do	do	1,200 00	New York.
69	N. H. Stanton	1,200	do	do	1,200 00	Pennsylvania.
70	E. D. Stone	1,200	do	do	1,200 00	Massachusetts.
71	Sarah L. Myers	1,200	do	do	1,200 00	Pennsylvania.
72	William F. McBride	1,200	do	do	1,200 00	Do.
73	Robert M. Barnitz	1,200	do	do	1,200 00	New York.
74	F. A. Von Tagen	1,200	do	do	1,200 00	Minnesota.
75	Robert E. Fugitt	1,200	do	do	1,200 00	Dist. of Columbia.
76	Harry W. Smith ⁶	1,200	do	do	1,174 35	Iowa.
77	S. W. Tucker	1,200	do	do	1,200 00	Pennsylvania.
78	John Berry	1,200	do	do	1,200 00	Dist. of Columbia.

¹ Absent 1 day without pay.

² Promoted from Class 2 August 1, 1886.

³ Absent 3 hours and 30 minutes without pay.

⁴ Promoted from Class 1, August 1, 1886.

⁵ Absent 3 hours without pay.

⁶ Absent 7 days, 6 hours, and 2 minutes without pay.

Statement showing the names of clerks and other persons employed, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
79	Hiram H. Martin	\$1,200	Dec. 1, 1885	Nov. 30, 1886	\$1,200 00	Illinois.
80	John A. Miller.....	1,200	do	do	1,200 00	New York.
81	J. M. McFarland.....	1,200	do	do	1,200 00	Dist. of Columbia.
82	Julia M. Edie ¹	1,200	do	do	1,200 00	Do.
83	G. Du B. Holgate ²	1,200	do	do	1,038 82	Pennsylvania.
84	Howard L. Johnson ³	1,200	do	do	1,200 00	Do.
CLASS C.						
85	H. W. Jackson.....	1,000	do	do	1,000 00	Iowa.
86	E. F. Long.....	1,000	do	do	1,000 00	Dist. of Columbia.
87	M. H. Fillebrown.....	1,000	do	do	1,000 00	Do.
88	Jennie B. Jones.....	1,000	do	do	1,000 00	Do.
89	Susan C. Roy.....	1,000	do	do	1,000 00	Do.
90	Eliza Wilkes.....	1,000	do	do	1,000 00	Do.
91	Ellen H. Sheldon ⁴	1,000	do	do	913 85	New York.
92	Annie Harding ⁵	1,000	do	do	932 58	Maine.
93	Clara T. Emory ⁵	1,000	do	do	932 58	Dist. of Columbia.
94	Emma J. Brewer ⁵	1,000	do	do	932 58	Kansas.
CLASS D.						
Copyists.						
95	Priscilla Hebb.....	900	do	do	900 00	Dist. of Columbia.
96	Ann C. Knight.....	900	do	do	900 00	Massachusetts.
97	Eliza C. Bull ⁶	900	do	do	896 82	Michigan.
98	Victoria J. Le Compte.....	900	do	do	900 00	Dist. of Columbia.
99	E. S. Crawford.....	900	do	do	900 00	Virginia.
100	Jennie Lawson.....	900	do	do	900 00	Massachusetts.
101	Mary L. Manger.....	900	do	do	900 00	Pennsylvania.
102	Jeannie C. Hoffar ⁷	900	do	do	898 78	Dist. of Columbia.
103	E. W. Owen ¹	900	do	do	900 09	Do.
104	Katharine R. Hill ⁸	900	do	do	880 42	Do.
105	E. C. Lancaster ⁹	900	do	do	900 00	Do.
106	Jane P. Montgomery ¹⁰	900	do	do	897 56	Ohio.
107	Bertha V. Miller ¹¹	900	do	do	900 00	Dist. of Columbia.
108	Harriet Chur ¹²	900	do	do	898 77	Pennsylvania.
109	M. S. Worth ¹³	900	do	do	1,100 27	New York.
Female messenger.						
110	Mary McGaw.....	480	do	do	480 00	Dist. of Columbia.
Messengers.						
111	George Phelps.....	840	do	do	840 00	Do.
112	Henry Payne.....	840	do	do	840 00	Do.
113	Patrick Wall.....	840	do	do	840 00	Do.
114	Charles Wilton.....	840	do	do	840 00	Do.
Assistant messengers.						
115	Thomas Allen.....	720	do	do	720 00	Do.
116	Charles McDonough.....	720	do	do	720 00	Do.
117	George W. White.....	720	do	do	720 00	Ohio.
118	George W. Giddens.....	720	do	do	720 00	Dist. of Columbia.
119	Jacob H. Frank.....	720	do	do	720 00	Do.
120	Frank O. Foster.....	720	do	do	720 00	Maine.
Laborers.						
121	Thomas Jones.....	480	do	do	480 00	Dist. of Columbia.
122	Samuel H. Brown.....	480	do	do	480 00	Do.
123	Catherine Graham.....	225	do	do	225 00	Do.

¹ Transferred from claims roll January 1, 1886.² Transferred from claims roll January 1, 1886; absent 49 days, 3 hours without pay.³ Transferred to claims roll January 1, 1886; transferred to regular roll March 1, 1886.⁴ Promoted from copyist August 1, 1886; absent 6 days, 6 hours, and 15 minutes without pay.⁵ Promoted from copyist August 1, 1886.⁶ Absent 1 day, 2 hours, and 5 minutes without pay.⁷ Absent 3 hours and 30 minutes without pay.⁸ Transferred from claims roll January 1, 1886; absent 8 days without pay.⁹ Transferred from claims roll June 16, 1886.¹⁰ Transferred from claims roll August 1, 1886; absent 1 day without pay.¹¹ Transferred from claims roll August 1, 1886.¹² Transferred from claims roll August 1, 1886; absent 3 hours and 30 minutes without pay.¹³ Transferred from claims roll, and reduced to copyist August 1, 1886.

Statement showing the names of clerks and other persons employed, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
Charwomen.						
124	Isabella Mackin ¹	\$240	Dec. 1, 1885	Nov. 30, 1886	\$199 95	Dist. of Columbia.
125	Elizabeth Hammond ¹	240	do	do	199 95	Do.
Engineer.						
126	Samuel Dale.....	1, 200	do	do	1, 200 00	Maryland.
Fireman.						
127	James Payne.....	720	do	do	720 00	Dist. of Columbia.
Watchmen.						
128	William H. Lewis	720	do	do	720 00	Do.
129	M. P. Desmond.....	720	do	do	720 00	Do.
130	James O'Hara	720	do	do	720 00	Do.
131	Patrick Delanthy.....	720	do	do	720 00	Do.
132	William Somers ²	720	Dec. 29, 1885	do	559 35	Do.
133	Thomas H. Cross ³	720	Dec. 1, 1885	do	720 00	Do.
134	Michael Delehanty ⁴	720	do	Dec. 6, 1885	11 09	Do.
CLASS 4.						
Draughtsman.						
135	Thomas P. Chiffelle	1, 800	do	Nov. 30, 1886	1, 800 00	West Virginia.
Superintendent of building.						
136	H. H. Parmenter.....	250	do	do	250 00	Massachusetts.
Claims Division.						
CLASS 4.						
137	John H. Hood	1, 800	do	do	1, 800 00	Dist. of Columbia.
CLASS 3.						
138	F. S. Altennes	1, 600	do	do	1, 600 00	Do.
CLASS 2.						
139	E. P. Corrazier ⁵	1, 400	do	July 31, 1886	935 93	Do.
140	Charles W. Jones ⁵	1, 400	do	do	935 93	Michigan.
CLASS 1.						
141	William H. Fuller ⁶	1, 200	do	Nov. 30, 1886	1, 334 84	Maryland.
142	Frank B. Holden ⁷	1, 200	do	do	1, 325 60	Maine.
143	Frank McNerhany.....	1, 200	do	do	1, 200 00	Missouri.
144	William Geddes	1, 200	do	do	1, 200 00	Indiana.
145	I. G. Jaquette ⁸	1, 200	do	do	1, 200 00	Pennsylvania.
146	Annie G. Davis ⁹	1, 200	do	do	1, 067 15	Dist. of Columbia.
147	T. A. Washington ¹⁰	1, 200	do	do	1, 066 76	Texas.
148	Annie E. Loomis ⁹	1, 200	do	do	1, 067 15	Virginia.
149	Louisa A. Byrne ¹¹	1, 200	do	July 31, 1886	801 09	Dist. of Columbia.
150	D. D. Tompkins ¹²	1, 200	do	do	801 09	Pennsylvania.
151	John Corson ¹³	1, 200	do	Dec. 20, 1885	.....	Iowa.
152	J. M. Pipes ¹⁴	1, 200	do	July 14, 1886	745 65	West Virginia.
153	William D. Hughes ¹²	1, 200	do	July 31, 1886	801 09	Ohio.

¹ Pay increased from \$180 per annum August 1, 1886.

² Appointed December 9, 1885; transferred as laborer to office of superintendent State, War, and Navy Department November 20, 1886.

³ Transferred from assistant messenger, claims roll, November 20, 1886.

⁴ Died December 6, 1885.

Transferred to Class 1, A. G. O., August 1, 1886.

Reduced to Class 1, August 1, 1886.

Transferred to Class 1, July 15, 1886.

⁸ Transferred from regular roll January 1, 1886.

⁹ Transferred from regular roll, Class \$1,000, August 1, 1886.

¹⁰ Transferred from regular roll, Class \$1,000, August 1, 1886; absent 1 hour without pay.

¹¹ Discharged July 31, 1886.

¹² Transferred to S. G. O., Class \$1,000, August 1, 1886.

¹³ Resigned December 20, 1885; absent 20 days without pay.

¹⁴ Resigned July 14, 1886.

Statement showing the names of clerks and other persons employed, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS C.						
154	Henry Colburn ¹	\$1, 000	Dec. 1, 1885	Nov. 30, 1886	\$1, 000 00	Maryland.
155	Lawrence O. Posey ²	1, 000	do	July 31, 1886	668 24	South Carolina.
156	Florence C. Bleecker ³	1, 000	do	Dec. 23, 1885	.....	New York.
CLASS D.						
<i>Copyists.</i>						
157	Joanna W. Turner ⁴	900	do	Nov. 30, 1886	900 00	Wisconsin.
158	Frank W. Fisher ⁵	900	do	July 15, 1886	559 24	New York.
159	M. S. Davis ⁶	900	do	July 31, 1886	548 59	Dist. of Columbia.
160	E. M. Hooe ⁷	900	do	do	600 82	Do.
161	Marian Goodall ⁸	900	do	do	599 77	Do.
162	Annie C. Wyeth ⁹	900	do	do	600 82	Do.
163	Mary C. Mitchell ¹⁰	900	do	do	589 81	Kentucky.
<i>Assistant messengers.</i>						
164	Christopher Shaw.....	720	do	Nov. 30, 1886	720 00	Missouri.
165	Henry Suydam.....	720	do	do	720 00	Pennsylvania.
166	John Whelan ¹¹	720	Nov. 20, 1886	do	22 17	Dist. of Columbia.
<i>Watchman.</i>						
167	Fanning Barnard ¹²	720	Dec. 1, 1885	July 31, 1886	480 65	Do.
CLASS 2.						
<i>Agents.</i>						
168	Joseph Livsey.....	1, 400	do	Nov. 30, 1886	1, 400 00	Tennessee.
169	Frederick A. Sawyer.....	1, 400	do	do	1, 400 00	Do.
170	Alexander Lynch ¹³	1, 400	do	do	1, 185 60	Iowa.
171	James Putnam.....	1, 400	do	do	1, 400 00	Do.
172	Thomas M. Thatcher.....	1, 400	do	do	1, 400 00	West Virginia.
173	John C. Dougherty.....	1, 400	do	do	1, 400 00	Pennsylvania.
174	Thomas J. Saunders.....	1, 400	do	do	1, 400 00	Iowa.
175	C. W. Taylor.....	1, 400	do	do	1, 400 00	New York.
176	Timothy Quinn.....	1, 400	do	do	1, 400 00	Do.
177	Ernest Hawkins.....	1, 400	do	do	1, 400 00	Tennessee.
178	William Ekin ¹²	1, 400	do	July 31, 1886	935 93	Pennsylvania.
179	Henry E. Fitz ¹⁴	1, 400	do	June 30, 1886	818 00	Maine.
180	Alexander R. Speel ¹⁵	1, 400	do	Feb. 24, 1886	331 89	Pennsylvania.
181	Henry C. Latshaw ¹⁴	1, 400	do	June 30, 1886	818 00	Missouri.
182	Madison Sallade ¹⁴	1, 400	do	June 30, 1886	818 00	Maryland.
183	Peter Melendy ¹⁴	1, 400	do	June 30, 1886	818 00	Iowa.
184	John S. Cooper ¹²	1, 400	do	July 31, 1886	935 93	Pennsylvania.
185	Arthur T. Reeve ¹⁶	1, 400	do	June 30, 1886	771 84	Iowa.
186	Wiley Britton ¹²	1, 400	do	July 31, 1886	935 93	Kansas.
187	Charles B. Bostwick ¹⁷	1, 400	do	Feb. 15, 1886	296 89	Illinois.
188	Oliver D. Kinsman ¹⁸	1, 400	do	July 31, 1886	935 93	Iowa.

¹ Transferred from regular roll August 1, 1886.² Transferred to S. G. O., Class \$1,000, August 1, 1886.³ Resigned December 23, 1885; absent 22 days without pay.⁴ Transferred from claims roll May 1, 1885.⁵ Transferred from regular roll January 1, 1886.⁶ Transferred to S. G. O., Class \$1,000, July 15, 1886.⁷ Discharged July 31, 1886; absent 21 days, 2 hours and 29 minutes without leave and without pay.⁸ Discharged July 31, 1886.⁹ Discharged July 31, 1886; absent 3 hours without pay.⁹ Transferred to claims roll June 16, 1886; discharged July 31, 1886.¹⁰ Transferred from regular roll July 1, 1886; discharged July 31, 1886; absent 4 days, 3 hours, and 30 minutes without pay.¹¹ Transferred from War Department from laborer, November 20, 1886.¹² Discharged July 31, 1886.¹³ Absent 56 days without pay.¹⁴ Discharged June 30, 1886.¹⁵ Resigned February 24, 1886.¹⁶ Discharged June 30, 1886; absent 12 days without pay.¹⁷ Discharged February 15, 1886.¹⁸ Transferred to Surgeon-General's Office, Class \$1,000, August 1, 1886.

Statement showing the names, compensation, &c., of clerks, messengers, watchmen, and laborers employed in the office of the Commissary-General of Subsistence, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
	CLASS B.					
1	William A. De Caidry	\$2,000	Dec. 1, 1885	Nov. 30, 1886	\$2,000 00	Maryland.
	CLASS 4.					
2	William H. Wetzel	1,800	... do	... do	1,799 00	Pennsylvania.
	CLASS 3.					
3	John Penn Jones	1,600	... do	... do	1,600 00	Do.
4	Charles T. Eldridge	1,600	... do	... do	1,600 00	Maine.
5	William H. Partridge	1,600	... do	... do	1,600 00	New York.
	CLASS 2.					
6	William Nourse	1,400	... do	... do	1,401 00	Maryland.
7	G. J. L. Foxwell	1,400	... do	... do	1,401 00	Army.
8	Charles N. Moore	1,400	... do	... do	1,401 00	Ohio.
9	Joseph S. Vansant	1,400	... do	... do	1,401 00	Iowa.
	CLASS 1.					
10	R. S. Kearney	1,200	... do	... do	1,200 00	Dist. of Columbia.
11	William F. Johnson	1,200	... do	... do	1,200 00	Pennsylvania.
12	John Barr	1,200	... do	... do	1,200 00	Delaware.
13	Thomas M. Moran	1,200	... do	... do	1,200 00	Dist. of Columbia.
14	Charles W. Pairo	1,200	... do	... do	1,200 00	Do.
15	S. Williard Knevals	1,200	... do	... do	1,200 00	New York.
16	Columbus J. Queen ¹	1,200	... do	Jan. 1, 1886	103 33	Illinois.
17	James B. K. Elliott	1,200	... do	Nov. 30, 1886	1,200 00	New York.
18	David W. Houghton	1,200	... do	... do	1,200 00	Ohio.
19	Joseph Blackwood	1,200	... do	... do	1,200 00	Pennsylvania.
20	Peter Meagher	1,200	... do	... do	1,200 00	Wisconsin.
21	Daniel Stewart	1,200	... do	... do	1,200 00	Missouri.
22	Eugene McSweeney ²	1,200	... do	... do	1,172 51	Dist. of Columbia.
23	William Giusta	1,200	... do	... do	1,200 00	Do.
24	George B. Hansell ³	1,000	... do	Jan. 31, 1886	170 11	} Washington Ter.
		1,200	Feb. 1, 1886	Nov. 30, 1886	996 67	
	CLASS C.				1,166 78	
25	Alpheus W. Clear	1,000	Dec. 1, 1885	... do	1,000 00	Pennsylvania.
26	Lyman B. Cutler	1,000	... do	... do	1,000 00	Illinois.
27	A. J. Sanderson ⁴	1,000	... do	... do	991 85	Pennsylvania.
28	Herman H. Voss	1,000	... do	... do	1,000 00	Dist. of Columbia.
29	Benjamin F. Smith	1,000	... do	... do	1,000 00	Do.
30	Charles Nelson ⁵	1,000	... do	May 17, 1886	449 51	Tennessee.
31	John L. Honchen	1,000	... do	Nov. 30, 1886	1,000 00	Indiana.
32	Parker N. Bailey	1,000	... do	... do	1,000 00	Massachusetts.
33	R. H. Gorgas ⁶	1,000	Mar. 1, 1886	... do	751 87	Alabama.
34	Joseph W. Anderson ⁷	1,000	June 19, 1886	... do	448 97	Washington Ter.
	Assistant messenger.					
35	George Lackey	720	Dec. 1, 1885	... do	720 00	Nebraska.
	Watchmen.					
36	Daniel Donovan	720	... do	... do	720 00	Massachusetts.
37	Henry Johnson	720	... do	... do	720 00	Dist. of Columbia.
	Laborers.					
38	William Pinion	660	... do	... do	660 00	Louisiana.
39	James Hannan	660	... do	... do	660 00	Dist. of Columbia.
	Superintendent of building.					
40	Charles T. Eldridge	250	... do	... do	250 00	Maine.

¹ Died January 2, 1886.

² Deducted \$27.49 on account of absence of 8 $\frac{1}{2}$ days in excess of 30 days.

³ Promoted from Class \$1,000 February 1, 1886.

⁴ Deducted \$8.15 on account of absence of 3 days in excess of 30 days.

⁵ Resigned May 16, 1886. Deducted \$10.87 on account of 4 days' absence in excess of 30 days.

⁶ Appointed March 1, 1886. Resigned November 30, 1886.

⁷ Appointed June 19, 1886.*

Statement showing the names, compensation, &c., of clerks, assistant messengers, watchmen, laborers, &c., employed in the office of the Surgeon-General of the Army from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS B.						
Chief clerk.						
1	Samuel Ramsey.....	\$2,000	Dec. 1, 1885	Nov. 30, 1886	\$2,000	Virginia.
CLASS 4.						
Clerks.						
2	John J. Beardsley	1,800	do	do	1,800 00	New York.
3	Oliphant B. Brown.....	1,800	do	do	1,800 00	Iowa.
4	Alonzo M. Buck	1,800	do	do	1,800 00	Wisconsin.
5	Cornelius P. Clark.....	1,800	do	do	1,800 00	Army.
6	George E. Corson	1,800	do	do	1,800 00	Maine.
7	David G. Dixon	1,800	do	do	1,800 00	Pennsylvania.
8	Jacob Frech	1,800	do	do	1,800 00	Dist. of Columbia.
9	Harry O. Hall.....	1,800	do	do	1,800 00	Iowa.
10	William E. Harley.....	1,800	do	do	1,800 00	Pennsylvania.
11	George A. Jones	1,800	do	do	1,800 00	New York.
12	Clement J. Myers	1,800	do	do	1,800 00	Do.
13	William Pittis	1,800	do	do	1,800 00	Army.
14	Rudolph Ravenburg.....	1,800	do	do	1,800 00	Do.
15	Adolph Rechenberg	1,800	do	do	1,800 00	Do.
16	Charles Roller	1,800	do	do	1,800 00	Maryland.
17	Joseph R. Rose	1,800	do	do	1,800 00	Army.
18	Edward Shaw	1,800	do	do	1,800 00	Massachusetts.
19	Reuben L. Shimer	1,800	do	do	1,800 00	New Jersey.
20	Luther W. Slater	1,800	do	do	1,800 00	Virginia.
21	Frederick R. Sparks	1,800	do	do	1,800 00	New York.
22	Frederick W. Stone.....	1,800	do	do	1,800 00	Army.
23	Benjamin F. Williams	1,800	do	do	1,800 00	New York.
24	John Wilson	1,800	do	do	1,800 00	Army.
25	Edward K. Winship	1,800	do	do	1,800 00	Connecticut.
CLASS 3.						
26	Frederick L. Apel	1,600	do	do	1,600 00	Pennsylvania.
27	Benjamin W. Browne	1,600	do	do	1,600 00	Florida.
28	Robert L. Clear	1,600	do	do	1,600 00	Dist. of Columbia.
29	William E. Covert	1,600	do	do	1,600 00	Kentucky.
30	Charles W. Egan	1,600	do	do	1,600 00	Texas.
31	John C. Fill	1,600	do	do	1,600 00	Dist. of Columbia.
32	George W. Fisher	1,600	do	do	1,600 00	Pennsylvania.
33	Frank J. Foster.....	1,600	do	do	1,600 00	New York.
34	John F. Gibson	1,600	do	do	1,600 00	Ohio.
35	William Gleason.....	1,600	do	do	1,600 00	Pennsylvania.
36	Thomas G. Haviland.....	1,600	do	do	1,600 00	New York.
37	Felix C. Holland	1,600	do	do	1,600 00	Pennsylvania.
38	Jeremiah R. Imbrie	1,600	do	do	1,600 00	Do.
39	Edward J. Jennings.....	1,600	do	do	1,600 00	New York.
40	Samuel Johnston	1,600	do	do	1,600 00	Washington Ter.
41	Magnus Koechling	1,600	do	do	1,600 00	Maryland.
42	James F. Linden	1,600	do	do	1,600 00	Pennsylvania.
43	Joseph F. Loughran	1,600	do	do	1,600 00	New York.
44	E. Scott McCleary	1,600	do	do	1,600 00	Pennsylvania.
45	James C. McConnell.....	1,600	do	do	1,600 00	Ohio.
46	Thomas L. Miller	1,600	do	do	1,600 00	Massachusetts.
47	William C. Myers	1,600	do	do	1,600 00	Pennsylvania.
48	Clinton Parkinson	1,600	do	do	1,600 00	Texas.
49	Ernst Schmid	1,600	do	do	1,600 00	Army.
50	William Schwennecker	1,600	do	do	1,600 00	Do.
51	William F. Snyder	1,600	do	do	1,600 00	Dist. of Columbia.
52	Frederick W. Storch.....	1,600	do	do	1,600 00	Do.
53	William H. Stuard	1,600	do	do	1,600 00	Pennsylvania.
54	Matthew H. Teulon.....	1,600	do	do	1,600 00	Massachusetts.
55	John A. Wise	1,600	do	do	1,600 00	Dist. of Columbia.
56	Albert G. Yount	1,600	do	do	1,600 00	Pennsylvania.
57	Bogislar Zglinitzki	1,600	do	do	1,600 00	Dist. of Columbia.
CLASS 2.						
59	Louis P. Altschu	1,400	do	do	1,400 00	Kansas.
50	Lorenz Auher	1,400	do	do	1,400 00	Army.
60	Samuel P. Banes	1,400	do	do	1,400 00	Pennsylvania.
61	Major W. Bayliss	1,400	do	do	1,400 00	Rhode Island.

Statement showing names, compensation, &c., of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 2—Continued.						
62	Anton Becker	\$1,400	Dec. 1, 1885	Nov. 30, 1886	\$1,400 00	Army.
63	Mathew Bryan	1,400	do	do	1,400 00	Do.
64	Thaddeus S. Buchanan	1,400	do	do	1,400 00	Do.
65	Walter Cadman	1,400	do	do	1,400 00	Dist. of Columbia.
66	Charles C. Casey	1,400	do	do	1,400 00	Pennsylvania.
67	Monroe G. Chew	1,400	do	do	1,400 00	Mississippi.
68	William E. Childs	1,400	do	do	1,400 00	Ohio.
69	Frank B. Crosthwaite ... {	1,200	do	Jan. 9, 1886	127 76	Michigan.
		1,400	Jan. 10, 1886	Nov. 30, 1886	1,251 88	
				1,379 64		
70	John H. Cutter	1,400	Dec. 1, 1885	do	1,400 00	Ohio.
71	William H. Deggs	1,400	do	do	1,400 00	Texas.
72	Horace W. Durnall	1,400	do	do	1,400 00	Pennsylvania.
73	Neilson Falls	1,400	do	do	1,400 00	North Carolina.
74	Edward S. Fletcher	1,400	do	do	1,400 00	Pennsylvania.
75	David Flynn	1,400	do	do	1,400 00	Army.
76	Gustav W. Furcron	1,400	do	do	1,400 00	Pennsylvania.
77	Adam Geib	1,400	do	do	1,400 00	New York.
78	Ira Gordon	1,400	do	do	1,400 00	Ohio.
79	William Guilford, jr	1,400	do	do	1,400 00	Maryland.
80	Stephen C. Hanson	1,400	do	do	1,400 00	New York.
81	Robert W. Hardy	1,400	do	do	1,400 00	Iowa.
82	James D. Hendley	1,400	do	do	1,400 00	Dist. of Columbia.
83	Alfred Hess	1,400	do	do	1,400 00	Tennessee.
84	Thomas Hynes	1,400	do	do	1,400 00	Missouri.
85	Charles M. Kalloch	1,400	do	do	1,400 00	Maine.
86	James V. Kearny	1,400	do	do	1,400 00	Illinois.
87	Daniel E. Lattimore	1,400	do	do	1,400 00	Indiana.
88	William M. Lay	1,400	do	do	1,400 00	Maryland.
89	James S. McFarland	1,400	do	do	1,400 00	Pennsylvania.
90	Edwin K. McKeever	1,400	do	do	1,400 00	Do.
91	William S. McPherson	1,400	do	do	1,400 00	Dist. of Columbia.
92	Stephen C. Miller	1,400	do	do	1,370 57	Minnesota.
93	Charles J. Moore	1,400	do	do	1,400 00	New York.
94	Wilhelm T. W. Moritz	1,400	do	do	1,400 00	Alabama.
95	John M. Nesbitt	1,400	do	do	1,400 00	Army.
96	Isaac P. Noyes	1,400	do	do	1,400 00	Rhode Island.
97	Thomas O'Beirne	1,400	do	do	1,400 00	Army.
98	Paul Orpogan	1,400	do	do	1,400 00	South Carolina.
99	John L. Owens	1,400	do	do	1,400 00	Dist. of Columbia.
100	William Palmer	1,400	do	do	1,400 00	Army.
101	Wilson D. Palmer	1,400	do	do	1,400 00	New York.
102	Luther M. Penfield	1,400	do	do	1,400 00	Connecticut.
103	Charles H. Pennington	1,400	do	do	1,400 00	Texas.
104	Charles A. Perkins	1,400	do	do	1,400 00	Dist. of Columbia.
105	Peter Preuss	1,400	do	do	1,400 00	New York.
106	Walter Procter	1,400	do	do	1,396 20	Navy.
107	Benjamin W. Reiss	1,400	do	do	1,400 00	Dist. of Columbia.
108	James Richardson	1,400	do	Jan. 8, 1886	149 11	Do.
109	Lewis H. Rose	1,400	do	Nov. 30, 1886	1,400 00	New York.
110	William A. Ruess	1,400	do	do	1,400 00	Ohio.
111	Matthew Ryan	1,400	do	do	1,400 00	New York.
112	James W. St. Clair	1,400	do	do	1,400 00	Dist. of Columbia.
113	Pierre C. Stevens	1,400	do	do	1,400 00	Pennsylvania.
114	James Taylor	1,400	do	do	1,400 00	Maryland.
115	James L. Taylor	1,400	do	do	1,400 00	Pennsylvania.
116	Charles H. Underwood	1,400	do	do	1,400 00	Do.
117	Michael E. Urell	1,400	do	do	1,400 00	New York.
118	Charles Watson	1,400	do	do	1,400 00	Massachusetts.
119	Charles F. Whiteley	1,400	do	do	1,400 00	Florida.
120	David H. Yount	1,400	do	do	1,400 00	Pennsylvania.
CLASS 1.						
121	Charles Abert	1,200	do	do	1,200 00	Maryland.
122	Morris L. Ackerman	1,200	do	do	1,200 00	New Jersey.
123	Mason P. Adams	1,200	do	do	1,200 00	New York.
124	Arthur D. Addison	1,200	do	Aug. 31, 1886	857 61	Maryland.
125	Isaac H. Allen	1,200	do	May 18, 1886	559 33	Illinois.
126	Osborn Ashley	1,200	do	Nov. 30, 1886	1,200 00	Do.
127	Oliver M. Atwood	1,200	do	do	1,200 00	Do.

Statement showing names, compensation, &c., of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
128	Robert M. Bagby..... {	\$1,000 1,200	Dec. 1, 1885 Mar. 1, 1886	Feb. 28, 1886 Nov. 30, 1886	\$249 24 902 22 1,151 46	Virginia.
129	William S. Ballard.....	1,200	Dec. 1, 1885	do	1,200 00		New York.
130	Charles R. Barker.....	1,200	do	do	1,200 00	Massachusetts.
131	Seward S. Beach	1,200	do	do	1,200 00	Michigan.
132	James H. Bessling.....	1,200	do	do	1,200 00	New York.
133	Alexander C. Black.....	1,200	do	do	1,200 00	Indiana.
134	Lorenzo D. Bond	1,200	do	Apr. 17, 1886	457 13	Dist. of Columbia.
135	Archibald Brown.....	1,200	do	Nov. 30, 1886	1,200 00	New Jersey.
136	Edmund H. Brown	1,200	do	do	1,200 00	Dist. of Columbia.
137	Mark Burnham	1,200	do	do	1,200 00	Ohio.
138	Thomas B. Buxton	1,200	do	do	1,200 00	New York.
139	Frederick G. Calvert	1,200	do	do	1,200 00	Maryland.
140	Andrew N. Canfield	1,200	do	do	1,200 00	Iowa.
141	Raymond F. Cardella.....	1,200	do	do	1,200 00	Dist. of Columbia.
142	Francis W. Carden.....	1,200	do	do	1,200 00	Iowa.
143	Elbridge G. Chapman.....	1,200	do	do	1,200 00	New York.
144	George W. Chase.....	1,200	do	do	1,200 00	Rhode Island.
145	Peter C. Cheeks.....	1,200	do	do	1,200 00	New York.
146	Raleigh E. Colston.....	1,200	do	do	1,200 00	Virginia.
147	J. Warren Conard.....	1,200	do	do	1,200 00	Pennsylvania.
148	Charles C Coombs	1,200	do	do	1,200 00	Missouri.
149	William H. Copeman.....	1,200	do	do	1,200 00	Tennessee.
150	John C. Cox..... {	1,000 1,200	do	Feb. 28, 1886 Nov. 30, 1886	249 24 900 28 1,149 52	Ohio.
151	Reuben Cox	1,200	Dec. 1, 1885	do	1,200 00		Kansas.
152	George D. Cudlip.....	1,200	do	do	1,147 83	Dist. of Columbia.
153	J. Madison Cutts..... {	1,000 1,200	do	June 17, 1886 Nov. 30, 1886	545 78 546 15 1,091 93	Do.
154	Charles A. Darling.....	1,200	Dec. 1, 1885	do	1,200 00		South Carolina.
155	Frederick E. David.....	1,200	do	do	1,200 00	Illinois.
156	John B. Davidson	1,200	do	do	1,200 00	Dist. of Columbia.
157	Daniel F. Dayhuff.....	1,200	do	do	1,200 00	Indiana.
158	George C. Deno.....	1,200	do	do	1,200 00	Dist. of Columbia.
159	Bennet J. Denson.....	1,200	do	do	1,200 00	New York.
160	Addison Dent.....	1,200	do	do	1,200 00	Dist. of Columbia.
161	Charles W. Dietrich	1,200	do	do	1,200 00	Ohio.
162	Richard J. Donnelly	1,200	do	do	1,200 00	Missouri.
163	James H. Dony	1,200	do	do	1,200 00	Nebraska.
164	Alanson S. Douglas.....	1,200	do	do	852 62	Vermont.
165	Burton T. Doyle	1,200	do	Mar. 10, 1886	331 09	Tennessee.
166	Albert G. Drane	1,200	do	Nov. 30, 1886	1,200 00	Georgia.
167	George G. Drew	1,200	do	do	1,200 00	Kansas.
168	William L. Drury.....	1,200	do	do	1,200 00	California.
169	John N. Ehle.....	1,200	do	do	1,200 00	Wisconsin.
170	Alexander Fairley	1,200	do	do	1,200 00	Dist. of Columbia.
171	John H. Filden.....	1,200	do	Feb. 28, 1886	196 67	Michigan.
172	Roswell W. Fish.....	1,200	do	Apr. 3, 1886	407 68	Connecticut.
173	Butler Fitch.....	1,200	do	Nov. 30, 1886	1,200 00	New York.
174	Napoleon B. Fithian	1,200	do	do	1,200 00	Kansas.
175	Oscar Foote.....	1,200	do	Apr. 27, 1886	483 58	Indiana.
176	Samuel W. Forrest.....	1,200	do	Nov. 30, 1886	1,200 00	Do.
177	Alfred French	1,200	do	do	1,200 00	Ohio.
178	Alpheus P. French	1,200	do	do	1,200 00	Alabama.
179	T. Fulton Gantt.....	1,200	do	do	1,167 39	Nebraska.
180	Alfred H. Gawler.....	1,200	do	do	1,200 00	Dist. of Columbia.
181	Richard H. Gilliam	1,200	do	do	1,196 74	Virginia.
182	William R. Goodman.....	1,200	do	do	1,200 00	Maryland.
183	Leonard K. Graves.....	1,200	do	do	1,177 07	New Hampshire.
184	Charles H. Green	1,200	do	June 16, 1886	654 94	Illinois.
185	William M. Gray..... {	1,000 1,200	do	Feb. 28, 1886 Nov. 30, 1886	249 24 902 22 1,151 46	Pennsylvania.

Statement showing names, compensation, &c., of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
186	Isaac N. Hammer..... {	\$1,000 1,200	Dec. 1, 1885 Sept. 14, 1886	Sept. 13, 1886 Nov. 30, 1886	\$788 05 255 43 1,043 48	Tennessee.
187	Thomas B. Hardin, jr.....	1,200	Dec. 1, 1885	Sept. 14, 1886	948 92		Kentucky.
188	John A. Hasson.....	1,200	do	Nov. 30, 1886	1,200 00	Delaware.
189	Isaac Hawling.....	1,200	do	do	1,200 00	Virginia.
190	George Henderson.....	1,200	do	do	1,200 00	West Virginia.
191	George W. Henley.....	1,200	do	do	1,190 22	Indiana.
192	William D. Henry.....	1,200	do	do	1,200 00	Virginia.
193	James T. Hensley.....	1,200	do	do	1,200 00	Ohio.
194	James W. Hester.....	1,200	do	do	1,200 00	Dist. of Columbia.
195	William W. Hibbard.....	1,200	do	do	1,200 00	New York.
196	Thomas B. Higgins.....	1,200	do	Oct. 31, 1886	1,101 09	Dist. of Columbia.
197	Samuel N. Hilton.....	1,200	do	Nov. 30, 1886	1,200 00	Arkansas.
198	Paul B. Hinzen..... {	1,000 1,200	do Sept. 15, 1886	Sept. 14, 1886 Nov. 30, 1886	790 76 252 17 1,042 93	Kentucky.
199	Marion F. Holderman.....	1,200	Dec. 1, 1885	do	1,200 00		Illinois.
200	Ernest Holtzman.....	1,200	do	do	1,196 74	Dist. of Columbia.
201	William F. Horton.....	1,200	do	Jan. 6, 1886	121 09	Connecticut.
202	James H. Howard.....	1,200	do	Nov. 30, 1886	1,200 00	Maryland.
203	Harry A. Hullfish.....	1,200	do	do	1,196 74	New Jersey.
204	Henry W. Hurley.....	1,200	do	do	1,196 74	Missouri.
205	Jacob Jacobson..... {	1,000 1,200	do May 1, 1886	Apr. 30, 1886 Nov. 30, 1886	416 66 601 10 1,017 76	Ohio.
206	Thomas Jewell.....	1,200	Dec. 11, 1885	do	1,200 00		Virginia.
207	J. Scott Johnson.....	1,200	do	do	1,196 74	Kentucky.
208	Joseph Jony.....	1,200	do	do	1,200 00	Illinois.
209	Andrew Katstrom.....	1,200	do	do	1,200 00	Do.
210	Joseph J. Kearney.....	1,200	do	do	1,200 00	Do.
211	George E. Kelley.....	1,200	do	do	1,200 00	Massachusetts.
212	Patrick M. Kelly.....	1,200	do	do	1,200 00	West Virginia.
213	Pierre M. Kennerly.....	1,200	do	do	1,196 74	Texas.
214	Frederick Knoop.....	1,200	do	do	1,200 00	Dist. of Columbia.
215	William Fay Knox.....	1,200	do	do	1,100 00	Colorado.
216	J. Melvin Lamb.....	1,200	do	do	1,200 00	Pennsylvania.
217	George Lawrence..... {	1,000 1,200	do May 19, 1886	May 18, 1886 Nov. 30, 1886	466 11 641 76 1,107 87	Ohio.
218	Winborn Lawton.....	1,200	Dec. 1, 1885	do	1,200 00		South Carolina.
219	Joseph C. Lay.....	1,200	do	do	1,200 00	Maryland.
220	William J. Leib.....	1,200	do	do	1,200 00	Dist. of Columbia.
221	John D. Leonard.....	1,200	do	do	1,200 00	Do.
222	Thomas H. Lewis.....	1,200	do	do	1,200 00	Nevada.
223	J. McLean Lipscomb.....	1,200	do	do	1,200 00	Virginia.
224	Frederick B. Loftus.....	1,200	do	do	1,200 00	New York.
225	Philander Lucas.....	1,200	do	do	1,200 00	Kansas.
226	William C. McCauslen.....	1,200	do	Dec. 16, 1885	52 17	Ohio.
227	John H. McCormick.....	1,200	do	Nov. 30, 1886	1,200 00	Illinois.
228	William H. J. Malvin.....	1,200	do	do	1,200 00	Ohio.
229	John N. Manning.....	1,200	do	do	1,200 00	Do.
230	Frank Martin.....	1,200	do	do	1,200 00	South Carolina.
231	John C. Maxwell.....	1,200	do	do	1,200 00	New York.
232	Christopher Mead.....	1,200	do	do	1,200 00	Massachusetts.
233	Silas Merchant.....	1,200	do	do	1,200 00	New Jersey.
234	Charles R. Miller.....	1,200	do	do	1,200 00	Ohio.
235	Jacob G. Moore.....	1,200	do	do	1,200 00	Dist. of Columbia.
236	Samuel A. Muhleman.....	1,200	do	do	1,200 00	West Virginia.
237	Freeman H. M. Murray.....	1,200	do	do	1,200 00	Ohio.
238	Frank D. Neale.....	1,200	do	do	1,200 00	Wisconsin.
239	John R. Neely..... {	1,000 1,200	do Mar. 11, 1886	Mar. 10, 1886 Nov. 30, 1886	275 91 870 00 1,145 91	Illinois.

Statement showing names, compensation, &c., of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
240	William H. Neill.....	\$1,200	Dec. 1, 1885	Nov. 30, 1886	\$1,200 00	Maryland.
241	Joshua Nicholls.....	1,200	do	do	1,170 65	Georgia.
242	Frederick K. Nichols.....	1,200	do	do	1,200 00	Vermont.
243	Edward McC. Noel.....	1,200	do	do	1,200 00	Missouri.
244	Charles C. Noonan.....	1,200	do	do	1,190 22	New York.
245	John H. D. Nordeman.....	1,200	do	do	1,200 00	Illinois.
246	Charles A. Norton.....	1,200	do	do	1,200 00	Maine.
247	Herbert E. Noteman.....	1,200	do	do	1,200 00	Kansas.
248	Patrick O'Hagan.....	1,200	do	do	1,200 00	Dist. of Columbia.
249	William H. Outtan.....	1,200	do	do	1,200 00	North Carolina.
250	Runnion M. Patrick..... {	1,000	do	Dec. 16, 1885	43 48	New York.
		1,200	Dec. 17, 1885	Nov. 30, 1886	1,148 91	
					1,192 39	
251	Charles W. Petersen.....	1,200	Dec. 1, 1885	do	1,196 74	Dist. of Columbia.
252	Horace Piper.....	1,200	do	do	1,200 00	Maine.
253	Allen W. Prather.....	1,200	do	do	1,200 00	Indiana.
254	Edward G. Randall.....	1,200	do	do	1,200 00	Pennsylvania.
255	John L. Rea.....	1,200	do	do	1,200 00	Ohio.
256	John F. Reardon.....	1,200	do	do	1,200 00	Do.
257	William B. Renner.....	1,200	do	do	1,200 00	Dist. of Columbia.
258	Enos T. Rochester.....	1,200	do	do	1,200 00	New York.
259	Alphonso P. Rogers.....	1,200	do	do	1,200 00	Minnesota.
260	David W. Ronsaville.....	1,200	do	do	1,200 00	Maryland.
261	Henry N. Rothery.....	1,200	do	do	1,200 00	New York.
262	George C. Sampson.....	1,200	do	do	1,200 00	Dist. of Columbia.
263	James W. Sands.....	1,200	do	do	1,200 00	Ohio.
264	Charles B. Sayer.....	1,200	do	do	1,200 00	Pennsylvania.
265	Arthur Schatz.....	1,200	do	do	1,200 00	Missouri.
266	Herman J. Schulters.....	1,200	do	do	1,200 00	Wisconsin.
267	John C. Scofield.....	1,200	do	do	1,200 00	Georgia.
268	Clarence F. Small.....	1,200	do	do	1,200 00	Ohio.
269	George W. Smoot.....	1,200	do	do	1,196 74	Maryland.
270	John W. Sowden.....	1,200	do	do	1,200 00	Michigan.
271	Edgar Speiden.....	1,200	do	do	1,200 00	Dist. of Columbia.
272	Wilbur V. K. Spencer.....	1,200	do	do	1,200 00	Kansas.
273	James T. Sprightley.....	1,200	do	do	1,200 00	Colorado.
274	Reinhold Springsguth.....	1,200	do	do	1,200 00	New York.
275	Abram F. Springsteen.....	1,200	Mar. 9, 1886	do	876 67	Indiana.
276	Henry S. Stevens.....	1,200	Dec. 1, 1885	do	1,200 00	Connecticut.
277	James M. Stewart.....	1,200	do	do	1,200 00	Massachusetts.
278	David G. Struble.....	1,200	do	do	1,200 00	Michigan.
279	Edwin H. Tabler.....	1,200	do	do	1,200 00	Dist. of Columbia.
280	George H. Taggard.....	1,200	do	do	1,200 00	New Hampshire.
281	Hugh L. Taylor..... {	1,000	do	Apr. 17, 1886	380 94	Tennessee.
		1,200	Apr. 18, 1886	Nov. 30, 1886	695 05	
					1,075 99	
282	Oliver P. Temple.....	1,200	Dec. 1, 1885	do	1,200 00	Do.
283	George P. Tenney.....	1,200	do	do	1,200 00	New Hampshire.
284	Frank W. Test.....	1,200	do	do	1,200 00	Illinois.
285	Bertis B. Thompson.....	1,200	do	do	1,200 00	Indiana.
286	Wilson H. Thompson..... {	1,000	do	Aug. 31, 1886	752 72	Virginia.
		1,200	Sept. 1, 1886	Nov. 30, 1886	297 82	
					1,050 54	
287	Hugh W. Throckmorton.....	1,200	Dec. 1, 1885	do	1,200 00	Do.
288	Decatur B. Treadway.....	1,200	do	do	1,200 00	Kentucky.
289	Charles Trought.....	1,200	do	Sept. 13, 1886	945 66	Army.
290	Jesse W. Underwood..... {	1,000	do	Apr. 3, 1886	342 48	Illinois.
		1,200	Apr. 4, 1886	Nov. 30, 1886	790 11	
					1,132 59	
291	Henry C. Upperman.....	1,200	Dec. 1, 1885	do	1,200 00	Maryland.
292	John A. Van Doren.....	1,200	do	do	1,200 00	Indiana.
293	Alexander C. Varela.....	1,200	do	do	1,200 00	California.
294	Pascal W. Vasser.....	1,200	do	do	1,200 00	Mississippi.
295	John J. Veazie.....	1,200	do	do	1,200 00	Do.

Statement showing names, compensation, &c., of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 1—Continued.						
296	George C. Videto.....	\$1, 200	Dec. 1, 1885	Nov. 30, 1886	\$1, 200 00	Pennsylvania.
297	James A. Wagner.....	1, 200	do.....	Mar. 9, 1886	324 43	Illinois.
298	Thomas Walker.....	1, 200	do.....	Nov. 30, 1886	1, 200 00	Alabama.
299	George W. Weed.....	1, 200	do.....	do.....	1, 200 00	Ohio.
300	Eugene Wells.....	1, 200	do.....	do.....	1, 200 00	Missouri.
301	John M. R. Welsh.....	1, 200	do.....	do.....	1, 200 00	Dist. of Columbia.
302	Charles F. Whitney..... {	1, 000	do.....	Oct. 31, 1886	918 24	} Illinois.
		1, 200	Nov. 1, 1886	Nov. 30, 1886	98 91	
				1, 017 15		
303	George A. Wright.....	1, 200	Dec. 1, 1885	do.....	1, 196 74	Maine.
304	Cornelius C. Willett.....	1, 200	do.....	do.....	1, 200 00	New York.
305	Spencer J. Willis.....	1, 200	do.....	do.....	1, 200 00	Minnesota.
306	James M. Wineberger.....	1, 200	do.....	do.....	1, 200 00	Virginia.
CLASS C.						
307	Edward Allen.....	1, 000	do.....	do.....	1, 000 00	Connecticut.
308	Samuel J. Armstrong.....	1, 000	Jan. 5, 1886	July 24, 1886	551 39	Pennsylvania.
309	Edwin R. Bagby.....	1, 000	Dec. 1, 1885	Nov. 30, 1886	997 28	Indiana.
310	Edwin D. Bailey.....	1, 000	do.....	do.....	1, 000 00	Massachusetts.
311	Solomon E. Baker.....	1, 000	do.....	do.....	1, 000 00	Kentucky.
312	Lyman Ballard.....	1, 000	July 1, 1886	do.....	396 98	New York.
313	R. Grant Barnwell.....	1, 000	Dec. 1, 1885	Feb. 6, 1886	184 24	Pennsylvania.
314	Levi C. Blake.....	1, 000	Nov. 24, 1886	Nov. 30, 1886	19 26	New Jersey.
315	James C. Boykin.....	1, 000	Dec. 1, 1885	do.....	1, 000 00	Georgia.
316	David H. P. Brown.....	1, 000	do.....	do.....	1, 000 00	Missouri.
317	George H. Cardozo.....	1, 000	do.....	do.....	1, 000 00	South Carolina.
318	Thomas T. Carson.....	1, 000	do.....	do.....	1, 000 00	Tennessee.
319	John T. Cash.....	1, 000	do.....	do.....	1, 000 00	New York.
320	Fessenden N. Chase.....	1, 000	Nov. 23, 1886	do.....	21 98	Maine.
321	William M. Chaplain.....	1, 000	Dec. 1, 1885	Feb. 10, 1886	198 13	North Carolina.
322	George A. Crutchfield.....	1, 000	do.....	Apr. 24, 1886	400 17	Texas.
323	Zadok T. Daniel.....	1, 000	Nov. 19, 1886	Nov. 30, 1886	32 85	Alabama.
324	Thomas B. Dapray.....	1, 000	Dec. 1, 1885	do.....	1, 000 00	South Carolina.
325	George P. Davis.....	1, 000	do.....	do.....	1, 000 00	Louisiana.
326	Matthew Duckworth.....	1, 000	do.....	May 26, 1886	488 09	Indiana.
327	Stephen Duncan.....	1, 000	do.....	Nov. 30, 1886	1, 000 00	California.
328	Jacob J. Elias.....	1, 000	do.....	do.....	997 28	Georgia.
329	Solomon B. Fahnestock.....	1, 000	do.....	do.....	1, 000 00	Pennsylvania.
330	Horner Fellows.....	1, 000	do.....	do.....	1, 000 00	Missouri.
331	Eugene A. Fields.....	1, 000	do.....	June 30, 1886	584 24	Illinois.
332	Frank W. Fisher.....	1, 000	July 15, 1886	Nov. 30, 1886	377 96	New York.
333	Walter H. Foss ¹	1, 000	Dec. 1, 1885	Feb. 28, 1886	.....	New Hampshire.
334	Charles E. Gannon.....	1, 000	Nov. 12, 1886	Nov. 30, 1886	51 87	Massachusetts.
335	Benjamin F. Gardner.....	1, 000	Dec. 1, 1885	Dec. 2, 1885	5 43	Kentucky.
336	Cæsar R. Gary.....	1, 000	Nov. 12, 1886	Nov. 30, 1886	51 87	Texas.
337	Horatio G. Gibson, jr.....	1, 000	Nov. 19, 1886	do.....	32 85	Kentucky.
338	Thomas Halstead.....	1, 000	Aug. 10, 1886	do.....	307 30	Pennsylvania.
339	Charles Hammond.....	1, 000	Dec. 1, 1885	Apr. 3, 1886	339 73	New York.
340	Kenton N. Harper.....	1, 000	Aug. 1, 1886	Nov. 30, 1886	331 76	Pennsylvania.
341	Frank M. Harshberger.....	1, 000	Dec. 1, 1885	do.....	1, 000 00	Do.
342	Robert E. Harvey.....	1, 000	Nov. 24, 1886	do.....	19 26	Ohio.
343	John George Hertwig.....	1, 000	Dec. 1, 1885	do.....	961 96	Missouri.
344	Isidore H. Himes.....	1, 000	do.....	do.....	1, 000 00	Illinois.
345	Talley R. Holmes.....	1, 000	do.....	do.....	1, 000 00	South Carolina.
346	Edward B. Holt.....	1, 000	do.....	do.....	1, 000 00	New Hampshire.
347	Augustus Hubbell.....	1, 000	do.....	do.....	1, 000 00	Vermont.
348	William D. Hughes.....	1, 000	Aug. 1, 1886	do.....	168 96	Ohio.
349	William H. Huston.....	1, 000	Dec. 1, 1885	do.....	1, 000 00	Iowa.
350	Edwin R. Johnson.....	1, 000	do.....	do.....	989 13	Rhode Island.
351	Walter S. Kave.....	1, 000	do.....	do.....	1, 000 00	Missouri.
352	Howard M. Kelley.....	1, 000	do.....	do.....	1, 000 00	New Jersey.
353	Denis M. Kennedy.....	1, 000	do.....	do.....	1, 000 00	Do.
354	Oliver D. Kinsman.....	1, 000	Aug. 1, 1886	do.....	251 76	Iowa.
355	Amos Luke.....	1, 000	Dec. 1, 1885	July 26, 1886	652 17	Ohio.
356	Patrick McEneany.....	1, 000	do.....	Nov. 30, 1886	1, 000 00	Kansas.
357	T. Bruce McFalls.....	1, 000	do.....	do.....	1, 000 00	Dist. of Columbia.
358	Orlando M. McPherson.....	1, 000	do.....	do.....	1 000 00	Kansas.

¹ Absent on leave without pay from December 1, 1885, to February 28, 1886.

Statement showing names, compensation, &c.. of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS C—Continued.						
359	Thomas F. Madden.....	\$1,000 1,000	Dec. 1, 1885 Mar. 30, 1886	Feb. 28, 1886 Nov. 10, 1886	248 13 616 97	Pennsylvania.
					865 10	
360	Cornelius D. Mecutchen ...	1,000	Dec. 1, 1885	Nov. 30, 1886	1,000 00		Do.
361	William Mehn	1,000	Nov. 29, 1886	do	5 67	Louisiana.
362	William J. Neel	1,000	Nov. 13, 1886	do	49 15	Georgia.
363	Burrows Nelson	1,000	Dec. 1, 1885	do	1,000 00	West Virginia.
364	Nathaniel Nesbitt	1,000	do	do	1,000 00	Alabama.
365	Albert M. Noyes	1,000	do	do	1,000 00	Dist. of Columbia.
366	Ernest B. Osborne	1,000	do	do	1,000 00	New York.
367	William Overbeek	1,000	do	do	1,000 00	Michigan.
368	Louis H. Perley	1,000	do	do	1,000 00	Illinois.
369	John S. Poler	1,000	do	do	1,000 00	New York.
370	Lawrence O. Posey	1,000	Aug. 1, 1886	do	251 76	South Carolina.
371	Charles G. Powell	1,000	Dec. 1, 1885	do	1,000 00	Indiana.
372	Alexis L. Pratt	1,000	do	July 26, 1886	652 17	California.
373	Mahlon Pursell	1,000	do	Nov. 30, 1886	1,000 00	Virginia.
374	Charles K. Remsberg	1,000	do	do	1,000 00	Maryland.
375	William P. Ripley	1,000	do	do	1,000 00	Louisiana.
376	Z. Howe Ripley	1,000	do	do	1,000 00	Michigan.
377	Madison Salladé	1,000	Oct. 5, 1886	do	155 13	Pennsylvania.
378	Daniel K. Sargent	1,000	Dec. 1, 1885	do	1,000 00	Iowa.
379	Henry T. Scudder	1,000	do	June 30, 1886	515 56	Wisconsin.
380	Harry W. Selah	1,000	do	Nov. 30, 1886	1,000 00	Nebraska.
381	Joseph S. F. Sessford	1,000	do	do	1,000 00	Dist. of Columbia.
382	Charles D. Shadbolt	1,000	do	do	1,000 00	Missouri.
383	Alonzo W. Shunk	1,000	do	do	1,000 00	Pennsylvania.
384	Richard M. Sparks	1,000	Mar. 2, 1886	Mar. 22, 1886	58 33	Dist. of Columbia.
385	William C. Spencer	1,000	Dec. 1, 1885	Nov. 30, 1886	1,000 00	Maryland.
386	John P. Stout	1,000	do	do	983 70	Ohio.
387	Henry H. Swearingen	1,000	Nov. 16, 1886	do	41 00	Georgia.
388	Austin C. Sweet	1,000	Dec. 1, 1885	do	994 57	California.
389	Asbury N. Thompson	1,000	do	Mar. 6, 1886	262 02	Dist. of Columbia.
390	Beecher L. Thomson	1,000	do	Nov. 30, 1886	1,000 00	New York.
391	Daniel D. Tompkins	1,000	Aug. 1, 1886	do	310 02	Pennsylvania.
392	William J. R. Thönssen	1,000	Dec. 1, 1885	Apr. 5, 1886	345 23	Texas.
393	Henry von der Tann	1,000	do	Nov. 30, 1886	1,000 00	Dakota.
394	Bernard Wagner	1,000	do	do	1,000 00	Indiana.
395	Samuel S. H. Washington	1,000	do	do	997 28	South Carolina.
396	Louis L. Waters	1,000	do	do	1,000 00	New York.
397	Edwin A. Welsh	1,000	do	do	1,000 00	Kentucky.
398	William C. Whitney	1,000	do	do	1,000 00	Dist. of Columbia.
399	James V. Wiggins	1,000	Aug. 4, 1886	do	326 61	Texas.
400	Thomas A. Wilkin	1,000	Dec. 1, 1885	do	1,000 00	Ohio.
401	Charles Williams	1,000	do	June 12, 1886	534 79	Kentucky.
402	William F. Winans	1,000	May 22, 1886	Nov. 30, 1886	525 89	New York.
403	John C. Winn	1,000	Dec. 1, 1885	do	1,000 00	Dist. of Columbia.
404	Nathaniel T. Worley	1,000	do	Nov. 18, 1886	964 44	Tennessee.
405	Harry H. Wyeth	1,000	do	Nov. 30, 1886	1,000 00	Maryland.
406	Edward J. Young	1,000	do	do	1,000 00	Louisiana.
407	Robert W. Young	1,000	do	do	1,000 00	Wyoming.
CLASS 3.						
Anatomist.						
408	Jacob L. Worton	1,600	do	do	1,600 00	Pennsylvania.
CLASS 2.						
Engineer.						
409	William B. Kimball	1,400	do	do	1,400 00	Connecticut.
CLASS C.						
Skilled mechanic.						
410	John F. Wild	1,000	do	do	1,000 00	Dist. of Columbia.
Assistant messengers.						
411	Edward Atkins	720	do	do	720 00	Tennessee.
412	Samuel Bryant	720	do	do	720 00	Dist. of Columbia.

Statement showing names, compensation, &c., of clerks, assistant messengers, &c.—Cont'd.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
<i>Assistant messengers—Con'd.</i>						
413	John F. Cody.....	\$660	Dec. 1, 1885	Jan. 20, 1886	\$92 27	} Pennsylvania.
		720	Jan. 21, 1886	Nov. 30, 1886	620 00	
					712 27	
414	Michael Duffy.....	720	Dec. 1, 1885	do	720 00	New York.
415	John Fogarty.....	720	do	do	720 00	Army.
416	Martin Gannon.....	720	do	do	720 00	do.
417	Nicholas Gilroy.....	720	do	do	720 00	Rhode Island.
418	James Greenfield.....	720	do	do	720 00	Dist. of Columbia.
419	John J. Hanlon.....	720	do	do	720 00	New York.
420	Joseph P. Harris.....	720	do	do	720 00	Dist. of Columbia.
421	James R. Harris.....	720	do	do	720 00	Mississippi.
422	James Hess.....	720	do	do	720 00	Maryland.
423	Eli Jackson.....	720	do	do	720 00	Dist. of Columbia.
424	James H. Murphy.....	720	do	do	720 00	Massachusetts.
425	Richard Osborn.....	720	do	do	720 00	Virginia.
426	Joshua Parker.....	720	do	do	720 00	Delaware.
427	William G. Silence.....	720	do	do	720 00	Dist. of Columbia.
428	Aaron Stern.....	720	do	do	720 00	Army.
<i>Watchmen.</i>						
429	John G. Burkhardt.....	720	do	do	720 00	Dist. of Columbia.
430	John Crawford.....	720	do	do	720 00	New Jersey.
431	Theobald Frech.....	720	do	do	720 00	New York.
432	Patrick Hallern.....	720	do	do	720 00	Dist. of Columbia.
433	William McCoy.....	720	do	do	720 00	Pennsylvania.
434	John C. Mack.....	720	do	do	720 00	Do.
435	George W. Montgomery...	720	Dec. 14, 1885	do	695 22	Ohio.
436	Frederick Neujahr.....	720	Dec. 1, 1885	do	720 00	Missouri.
<i>Laborers.</i>						
437	Thomas Adams.....	660	do	do	660 00	Dist. of Columbia.
438	William Barnes.....	660	do	do	660 00	Missouri.
439	Jerimah Collins.....	660	do	do	660 00	New York.
440	Morris Downs.....	660	do	do	660 00	Do.
441	George Hearns.....	660	do	do	660 00	Dist. of Columbia.
442	Louis C. Heye.....	660	Feb. 1, 1886	July 19, 1886	307 24	Ohio.
443	Cornelius Morgan.....	660	Dec. 1, 1885	Nov. 30, 1886	660 00	Virginia.
444	Thomas Morley.....	660	do	do	660 00	Do.
445	William Myres.....	660	do	do	660 00	Dist. of Columbia.
446	Bryan K. O'Dwyer.....	660	Feb. 17, 1886	do	518 83	Virginia.
447	Edward O'Malley.....	660	Nov. 8, 1886	do	41 85	Missouri.
448	Christopher P. Phillips....	660	Dec. 1, 1885	do	660 00	Dist. of Columbia.
449	John F. Reinhard.....	660	July 20, 1886	do	240 92	Ohio.
450	Frederick Schmidt.....	660	Dec. 1, 1885	Oct. 15, 1886	576 90	Dist. of Columbia.
451	Peter Thomas.....	660	do	Nov. 30, 1886	660 00	Virginia.
452	Thomas B. Warrick.....	660	do	do	660 00	Do.
453	Robert B. Wilson.....	660	do	do	660 00	Maryland.
<i>Messenger boy.</i>						
454	William H. Johnson.....	360	do	do	360 00	Dist. of Columbia.
<i>Superintendent of building on Tenth street.</i>						
455	Alfred H. Gawler.....	250	do	do	250 00	Do.
<i>Superintendent of building.</i>						
456	John Wilson.....	250	do	do	250 00	Army.

Statement showing the names, compensation, &c., of clerks, messengers, laborers, and watchmen employed in the office of the Paymaster-General from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS B.						
Chief clerk.						
1	G. D. Hanson.....	\$2, 000	Dec. 1, 1885	Nov. 30, 1886	\$2, 000	Dist. of Columbia
CLASS 4.						
2	William T. Kent	1, 800	Dec. 1, 1885	do	1, 800	Pennsylvania.
3	W. G. Newton	1, 800	do	do	1, 800	Ohio.
4	T. M. Exley	1, 800	do	do	1, 800	Massachusetts.
5	M. M. Bartlett	1, 800	do	do	1, 800	New Hampshire.
6	B. P. Murray	1, 800	do	do	1, 800	New York.
7	A. P. Eastman	1, 800	do	do	1, 800	Massachusetts.
CLASS 3.						
8	A. P. Dunlap	1, 600	Dec. 1, 1885	Nov. 30, 1886	1, 600	New York.
9	E. Goodrich	1, 600	do	do	1, 600	Ohio.
10	J. A. Sterling	1, 600	do	do	1, 600	Do.
11	Z. S. Buckler	1, 600	do	do	1, 600 00	Maryland.
12	William H. Harrison	1, 600	do	do	1, 600 00	Do.
13	James P. Pearson	1, 600	do	do	1, 600 00	New Hampshire.
14	A. M. Salmon	1, 600	do	do	1, 600 00	New Jersey.
CLASS 2.						
15	C. F. Cobb	1, 400	do	do	1, 400 00	Maryland.
16	F. I. Willis	1, 400	do	do	1, 400 00	New York.
17	George Hickenlooper	1, 400	do	do	1, 400 00	Iowa.
18	James B. Royce	1, 400	do	do	1, 400 00	Vermont.
19	J. L. H. Winfield	1, 400	do	do	1, 400 00	New York.
20	J. B. Diver	1, 400	do	do	1, 400 00	Do.
21	Samuel E. Thomason	1, 400	do	do	1, 400 00	Do.
22	T. J. MacNamee	1, 400	do	do	1, 400 00	Massachusetts.
23	Allen Wright	1, 400	do	do	1, 400 00	Vermont.
24	William Webb	1, 400	do	do	1, 400 00	Connecticut.
22	John W. Moore ¹	1, 400	do	June 30, 1886	818 00	Pennsylvania.
CLASS 1.						
26	E. L. Stone..... {	\$1, 400	Dec. 1, 1885	June 30, 1886	818 00	} Dist. of Columbia.
		1, 200	July 1, 1886	Aug. 8, 1886	137 18	
					955 18	
27	Fred Thomson ²	1, 200	Dec. 1, 1885	Nov. 30, 1886	1, 200 00	Army.
28	S. J. Dewey	1, 200	do	do	1, 200 00	New York
29	Edwin Frey	1, 200	do	do	1, 200 00	West Virginia.
30	R. Kingsman	1, 200	do	do	1, 200 00	Indiana.
31	Robert Hervey	1, 200	do	do	1, 200 00	Ohio.
32	J. M. Knowles ³	1, 200	do	June 30, 1886	700 00	Dist. of Columbia.
33	Daniel Shannon	1, 200	do	Nov. 30, 1886	1200 00	Do.
34	E. W. Moore ⁴ {	1, 200	do	Aug. 8, 1886	689 74	} Pennsylvania.
		1, 200	Aug. 9, 1886	Nov. 30, 1886	375 00	
					1, 064 74	
CLASS C.						
35	William L. Wolfley ⁵ {	1, 200	Dec. 1, 1885	June 30, 1886	700 00	} Ohio.
		1, 000	July 1, 1886	Nov. 30, 1886	416 00	
					1, 116 00	
36	F. W. Bird ⁶	1, 000	Dec. 1, 1885	Feb. 28, 1886	247 89	Massachusetts.
37	William T. Hearst ⁷	1, 000	Sept. 17, 1886	Nov. 30, 1886	204 04	Kansas.

¹ Transferred to Adjutant-General's Office.

² Reduced from Class 2 July 1, 1886, and died August 8, 1886.

³ Transferred to Adjutant-General's Office, July 1, 1886.

⁴ Promoted from Class C, August 9, 1886.

⁵ Reduced from Class 1 July 1, 1886.

⁶ Transferred and promoted to Class 1, Adjutant-General's Office, March 1, 1886.

⁷ Appointed September 17, 1886.

Statement showing the names of clerks and other persons employed, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
	<i>Assistant messenger.</i>					
38	William Kearney....	\$720	Dec. 1, 1885	Nov. 30, 1886	\$720 00	Ohio.
	<i>Watchmen.</i>					
39	Charles Brannan.....	720	do	do	720 00	Dist. of Columbia.
40	F. Armstrong.....	720	do	do	720 00	Do.
41	John Davis ¹	720	do	Oct. 8, 1886	615 65	Do.
42	M. B. Buckley.....	720	do	Nov. 30, 1886	720 00	Do.
43	T. T. Lane.....	720	do	do	720 00	Do.
44	James Loveless.....	720	do	do	720 00	Do.
45	Charles Kaufman.....	720	do	do	720 00	Army.
46	J. H. Leichter ²	660	do	Oct. 8, 1886	564 35	} Dist. of Columbia.
		720	Oct. 9, 1886	Nov. 30, 1886	104 35	
					668 70	
	<i>Laborers.</i>					
47	Wallace Grant.....	660	Dec. 1, 1885	do	660 00	Do.
48	F. K. Petty.....	660	do	do	660 00	Do.
49	Patrick Carpenter.....	660	do	do	660 00	Do.
50	Theodore Joseph.....	660	do	do	660 00	North Carolina.
51	Harrison Terrell ³	660	Oct. 15, 1886	do	84 89	Dist. of Columbia.
	<i>Superintendent of building.</i>					
52	William T. Kent.....	250	Dec. 1, 1885	do	250 00	Pennsylvania.

¹ Died October 8, 1883.

² Promoted from laborer October 9, 1886.

³ Appointed October 15, 1886.

List of persons employed in the office of the Chief of Engineers, showing the amount paid to each to November 30, 1886, inclusive, to carry into effect the various appropriations for rivers and harbors, fortifications, and surveys of military defenses.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
	CLASS A.					
	<i>Assistant engineers.</i>					
1	Thomas J. Lee ¹	\$4,200	Dec. 1, 1885	Nov. 30, 1886	\$4,025 00	Dist. of Columbia.
2	Richard W. Burgess.....	3,600	do	do	3,600 00	Do.
	<i>Draughtsman.</i>					
3	William W. Winship.....	2,100	do	do	2,100 00	Do.
	CLASS 4.					
	<i>Draughtsmen.</i>					
4	John Ober.....	1,800	do	do	1,800 00	Do.
5	Dennis Callahan.....	1,800	do	do	1,800 00	Maryland.
6	John S. Winship.....	1,800	do	do	1,800 00	Dist. of Columbia.
7	Charles G. Krebs.....	1,800	do	do	1,800 00	Maryland.
	CLASS 3.					
	<i>Clerks.</i>					
8	Waverly D. Drinkard.....	1,600	do	Mar. 31, 1886	533 34	Dist. of Columbia.
9	Sacket Duryee.....	1,400	do	July 31, 1886	933 34	} Virginia.
		1,600	Aug. 1, 1886	Nov. 30, 1886	533 33	
					1,466 67	

¹ Absent 15 days by permission, in excess of 30 days' leave.

List of persons employed in the office of the Chief of Engineers, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 3—Continued.						
10	James A. Edgar	\$1,400 1,600	Dec. 1, 1885 Aug. 1, 1886	July 31, 1886 Nov. 30, 1886	\$933 34 533 33	Pennsylvania.
					1,466 67	
CLASS 2.						
Draughtsman.						
11	Martin Altschuh	1,400	Dec. 1, 1885	...do	1,400 00	Do.
Clerks.						
12	George C. Thomas	1,400	...do	...do	1,400 00	Dist. of Columbia.
13	Samuel M. Marsh	1,400	...do	...do	1,400 00	Pennsylvania.
14	William B. Johns	1,400	...do	...do	1,400 00	Dist. of Columbia.
15	Henry A. Curtis	1,400	...do	...do	1,400 00	Vermont.
16	Henry B. King	1,400	...do	...do	1,400 00	Missouri.
17	Mirand W. Saxton	1,400	...do	...do	1,400 00	Massachusetts.
18	J. Hanson Price	1,400	...do	...do	1,400 00	Virginia.
19	John C. S. Burger ²	1,400	...do	...do	1,400 00	Dist. of Columbia.
20	August Schausten	1,400	...do	...do	1,400 00	Indiana.
CLASS 1.						
Draughtsmen.						
21	Joel R. P. Mechlin	1,200	...do	...do	1,200 00	Dist. of Columbia.
22	Franz Von Schilling	1,200	...do	...do	1,200 00	Virginia.
23	Albert N. Ober	1,200	...do	...do	1,200 00	Dist. of Columbia.
Clerks.						
24	Albert Grimes	1,200	...do	Jan. 12, 1886	140 00	Do.
25	William H. Watson	1,200	...do	Nov. 30, 1886	1,200 00	Maryland.
26	Lucien Garner	1,200	...do	Aug. 11, 1886	836 67	Dist. of Columbia.
27	Eugene J. Williams	1,200	...do	Nov. 30, 1886	1,200 00	New York.
28	William M. Davis	1,200	...do	...do	1,200 00	Dist. of Columbia.
28	Robert W. Jennings, jr. {	1,000 1,200	...do	Feb. 14, 1886 Nov. 30, 1886	205 56 953 33	Tennessee.
					1,158 89	
30	Court F. Wood	1,200	Oct. 19, 1886	Nov. 30, 1883	140 00	Michigan.
31	George W. Koonce	1,200	Nov. 11, 1886	...do	56 67	North Carolina.
CLASS D.						
32	Robert Sillers	1,000	Dec. 1, 1885	...do	1,000 00	Dist. of Columbia.
33	Truman J. Glover	1,000	...do	...do	1,000 00	Iowa.
34	Henry C. Sayles	1,000	...do	...do	1,000 00	Rhode Island.
35	James Maloney	1,000	Sept. 27, 1886	...do	177 77	Texas.
Mechanic.						
36	William H. Deckman		Dec. 1, 1885	...do	1,000 00	Dist. of Columbia.
Messengers.						
37	William J. Lee	640	...do	...do	840 00	Virginia.
38	Charles Haerle	640	...do	...do	840 00	Dist. of Columbia.
Assistant messengers.						
39	Henry Tudy	720	...do	...do	720 00	Do.
Skilled laborers.						
40	John A. Jewell	720	...do	...do	720 00	Do.
41	John C. Williamson	720	...do	...do	720 00	New Jersey.
42	James F. Fealy	720	Aug. 30, 1886	...do	182 00	Ohio.
Laborer and watchman.						
43	William H. Piper	600	Dec. 1, 1885	...do	600 00	Massachusetts.

Statement showing names, compensation, &c., of clerks, messengers, and laborers employed in the office of the Chief of Engineers, United States Army, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS B.						
<i>Chief clerk.</i>						
1	William J. Warren	\$2. 000	Dec. 1, 1885	Nov. 30, 1886	\$2, 000 00	New York.
CLASS 4.						
2	George T. Woodward.....	1, 800	do	do	1, 800 00	Dist. of Columbia.
3	Phineas J. Dempsey	1, 800	do	do	1, 800 00	Virginia.
4	Charles G. Love ¹	1, 800	do	Mar. 30, 1886	445 00	New York.
5	Fred. J. Willoughby.....	1, 800	do	Nov. 30, 1886	1, 800 00	New Hampshire.
6	Waverly D. Drinkard.....	1, 800	Apr. 1, 1886	do	1, 199 00	Dist. of Columbia.
CLASS 3.						
7	James Eveleth	1, 600	Dec. 1, 1885	do	1, 600 00	Virginia.
8	Waldemar Jansen	1, 600	do	do	1, 600 00	New York.
CLASS 2.						
9	William A. Anderson ²	1, 400	do	Dec. 14, 1885	53 33	Indiana.
10	John M. Jewell	1, 400	do	Nov. 30, 1886	1, 400 00	Mississippi.
11	Marion T. Anderson	1, 400	do	do	1, 400 00	Iowa.
12	Albert Grimes.....	1, 400	Jan. 13, 1886	do	1, 235 33	Dist. of Columbia.
CLASS 1.						
13	Henry E. Smith ³	1, 200	Dec. 1, 1885	Aug. 11, 1886	836 96	Ohio.
14	Joseph S. Moss	1, 200	do	Nov. 30, 1886	1, 200 00	Vermont.
15	S. A. McCarthy	1, 200	do	do	1, 200 00	Dist. of Columbia.
16	Lucian Garner	1, 200	Aug. 12, 1886	do	363 04	Do.
CLASS C.						
17	Samuel R. Kiner.....	1, 000	Dec. 1, 1885	do	1, 000 00	Illinois.
CLASS D.						
<i>Assistant messenger.</i>						
18	Fred. C. Hartman	720	do	do	720 00	Dist. of Columbia.
<i>Laborers.</i>						
19	Charles W. Franklin.....	660	do	do	660 00	Do.
20	Patrick O'Hare	660	do	do	660 00	Do.

¹ Absent 30 days without pay. Resigned March 31, 1886.

² Died December 14, 1885.

³ Resigned August 12, 1886.

Statement showing the names, compensation, &c., of clerks, messengers, &c., employed in the office of the Chief of Ordnance from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS B.						
Chief clerk.						
1	John J. Cook	\$2,000	Dec. 1, 1885	Nov. 30, 1886	\$2,000 00	Dist. of Columbia
CLASS 4.						
2	John Moran	1,800	do	do	1,800 00	Army.
3	E. A. Skillman	1,800	do	do	1,800 00	New Jersey.
4	A. W. Pentland	1,800	do	do	1,800 00	Pennsylvania.
CLASS 3.						
5	S. C. Hull	1,600	do	do	1,600 00	Illinois.
6	L. J. Bryant	1,600	do	do	1,600 00	Wisconsin.
CLASS 2.						
7	R. L. Walter	1,400	do	do	1,400 00	Army.
8	H. F. J. Brown	1,400	do	do	1,400 00	Pennsylvania.
CLASS 1.						
9	Charles S. Keller	1,200	do	do	1,200 00	Dist. of Columbia.
10	Charles E. Bailey	1,200	do	do	1,200 00	Do.
11	Austin Edgerly	1,200	do	do	1,200 00	Maine.
12	R. G. Sutton	1,200	do	do	1,200 00	Pennsylvania.
13	R. A. Foster	1,200	do	do	1,200 00	Dist. of Columbia.
14	Seth L. Clark	1,200	do	do	1,200 00	Vermont.
15	S. E. Culverwell	1,200	do	do	1,200 00	Maryland.
16	James S. Pierce	1,200	do	do	1,200 00	Pennsylvania.
17	Nathan Hazen	1,200	do	do	1,200 00	Do.
18	John L. Wilkins	1,200	do	do	1,200 00	Dist. of Columbia.
19	Geo. H. Ingraham, jr.	1,200	do	do	1,200 00	South Carolina.
20	John E. McLoran	1,200	do	do	1,200 00	Dist. of Columbia.
21	Russell West	1,200	do	do	1,200 00	Louisiana.
22	Martin Darnell	1,200	do	do	1,200 00	Maryland.
23	W. A. Morsell	1,200	do	do	1,200 00	Dist. of Columbia.
24	John A. Madigan	1,200	do	do	1,200 00	Do.
25	Seymour G. Wilson	1,200	do	do	1,200 00	Illinois.
26	Joseph Hertford	1,200	do	do	1,200 00	Do.
27	James M. Wimmer	1,200	do	do	1,200 00	Indiana.
28	J. N. Selby	1,200	do	do	1,200 00	Kansas.
29	Charles E. Pike	1,200	do	do	1,200 00	Wisconsin.
30	A. F. Springsteen	1,200	do	Mar. 8, 1886	323 34	Indiana.
31	James A. Wagner	1,200	Mar. 9, 1886	Nov. 30, 1886	876 66	Illinois.
CLASS C.						
32	John M. Smith	1,000	Dec. 1, 1885	do	1,000 00	Army.
33	Frank D. Lewis	1,100	do	do	1,000 00	Arkansas.
Messengers.						
34	Stephen Ganz	840	do	do	840 00	Pennsylvania.
35	John A. Simms	840	do	do	840 00	Maryland.
Assistant messenger.						
36	A. M. Howard	720	do	do	720 00	Dist. of Columbia.
Laborer.						
37	Joseph Sampson	660	do	do	660 00	Do.

ORDNANCE OFFICE, WAR DEPARTMENT,
December 1, 1886.

Statement showing the names, compensation, &c., of scientific experts, clerks, messengers, laborers, &c., employed in the office of the Chief Signal Officer of the Army, and paid from the appropriations of \$40,000 and \$30,000, provided for this purpose in the legislative, executive, and judicial appropriation bills approved respectively, March 3, 1885, and July 31, 1886, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS A.						
<i>Civilian assistant.</i>						
1	Cleveland Abbe..... <i>Professor of Electrical Science.</i>	\$4,500	Dec. 1, 1885	Nov. 30, 1886	\$4,500 00	New York.
2	Thomas C. Mendenhall..... <i>Professor.</i>	3,500	do	Oct. 31, 1886	3,219 00	Ohio.
CLASS B.						
<i>Professor.</i>						
3	William Ferrel	2,000	do	Sept. 30, 1886	1,668 00	West Virginia.
CLASS 4.						
<i>Junior professors.</i>						
4	Henry A. Hazen.....	1,800	do	Nov. 30, 1886	1,800 00	Connecticut.
5	Frank Waldo ¹	1,800	do	do	1,279 74	Massachusetts.
6	Thomas Russell.....	1,800	do	do	1,800 00	Michigan.
CLASS 3.						
<i>Translator and bibliographer.</i>						
7	Cleon J. Sawyer	1,600	do	do	1,600 00	Massachusetts.
<i>Junior professor.</i>						
8	Charles F. Marvin.....	1,600	do	do	1,600 00	Ohio.
CLASS 2.						
<i>Expert editor and proof-reader.</i>						
9	John M. Killits..... <i>Meteorologist and physicist.</i>	1,400	do	do	1,400 00	Do.
10	Lucian M. Turner	1,400	do	May 15, 1886	641 07	Illinois.
<i>Clerk.</i>						
11	Harlan P. Wolcott	1,400	Dec. 1, 1885	Apr. 15, 1886	525 69	Kansas.
CLASS 1.						
<i>Lithographer.</i>						
12	Thomas J. Flynn..... <i>Clerks.</i>	1,200	do	Nov. 30, 1886	1,200 00	Pennsylvania.
13	Reuben W. Hazen	1,200	do	do	1,200 00	Nebraska.
14	Thomas Halstead.....	1,200	Apr. 1, 1886	Aug. 10, 1886	430 44	Pennsylvania.
CLASS D.						
<i>General mechanic.</i>						
15	John Pennell ²	900	Dec. 1, 1885	Aug. 9, 1886	621 62	Ohio.
<i>Engineer.</i>						
16	Alexander McGuiggen	{ 648	do	Dec. 31, 1885	54 00	{ Dist. of Columbia.
		684	Jan. 1, 1886	Feb. 16, 1886	89 30	
		780	Feb. 17, 1886	July 26, 1886	43 28	

¹ On leave 105 days without pay.

² On leave one-half day without pay.

Statement showing the names, compensation, &c., of scientific experts, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
Clerks.						
17	Julia F. Randolph ¹	{ \$648 684 300 600	Dec. 1, 1885	Dec. 31, 1885	\$54 00	{ New Jersey.
			Jan. 1, 1886	Aug. 8, 1886	413 87	
			Aug. 9, 1886	Nov. 9, 1886	27 53	
			Nov. 10, 1886	Nov. 30, 1886	34 78	
18	Belle Gaston	{ 648 684 300 600	Dec. 1, 1885	Dec. 31, 1885	54 00	{ Dist. of Columbia.
			Jan. 1, 1886	Aug. 8, 1886	413 87	
			Aug. 9, 1886	Nov. 9, 1886	76 44	
			Nov. 10, 1886	Nov. 30, 1886	34 78	
Messengers.						
19	George W. Wilt	{ 648 684	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 9, 1886	54 00 416 35	{ Pennsylvania.
20	Edward A. Branham	{ 486 513	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	40 50 470 00	{ Virginia.
21	William Patrick	{ 432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	36 00 280 04	{ North Carolina.
22	Frank Matthews	{ 432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	36 00 280 04	{ Maryland.
23	Michael Hayes	{ 432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	36 00 280 04	{ Pennsylvania.
24	George J. Heck	{ 432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	36 00 280 04	{ Dist. of Columbia.
		432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	36 00 418 00		{ Maryland.
25	Gustavus Greenwell	{ 378 420	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	31 50 257 93	{ Dist. of Columbia.
26	Joseph P. Chase	{ 378 420	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	31 50 257 93	{ Virginia.
27	Allen Spencer	{ 378 420	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	31 50 257 93	{ Dist. of Columbia.
28	Joseph Glasgow	{ 324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	27 00 330 00	{ Do.
30	Herbert S. Town	{ 216 240	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 1, 1886	18 00 200 87	{ Do.
		300 378	Nov. 2, 1886 Dec. 1, 1885	Nov. 30, 1886 Dec. 1, 1885	23 91 31 50		{ Do.
31	William Dyer ²	{ 420 300	Jan. 1, 1886 Nov. 2, 1886	Nov. 1, 1886 Nov. 30, 1886	351 52 23 91	{ Do.
Press-boy.						
32	James Greer	{ 324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 11, 1886	27 00 211 09	{ Do.
Laborers.						
33	Emil Schumann	{ 540 570	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Aug. 9, 1886	45 00 346 96	{ Do.
		432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 20, 1886	36 00 418 00		{ Maryland.
34	William Washington	{ 432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 20, 1886	36 00 418 00	{ Do.
35	Richard H. Winemiller	{ 432 456	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	36 00 418 00		{ Dist. of Columbia.
36	Lewis Collier	{ 324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	27 00 330 00	{ Tennessee.
37	Jesse Anderson	{ 324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	27 00 330 00		{ Virginia.
38	Thomas O'Brien	1 25 p. d.	May 11, 1886	do	31 25	{ Do.
39	William H. Butler	1 25 p. d.	do	do	31 25		{ Do.
40	Richard Burch	1 12½ p. d.	Dec. 1, 1885	do	63 00	{ Do.
41	James T. Massey	1 12½ p. d.	do	do	64 12		{ Do.
42	Cary Dye	1 12½ p. d.	do	do	64 12	{ Do.
Carpenter.						
43	Enos Crews	{ 432 480	do	Dec. 31, 1885 Nov. 30, 1886	36 00 440 00	{ Dist. of Columbia.
		480	Jan. 1, 1886	Nov. 30, 1886	440 00		{ Do.
Stitchers and folders.						
44	Catherine T. Brannan	{ 324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	27 00 330 00	{ Do.
		324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	27 00 330 00		{ Do.
45	Hattie Astel	{ 324 360	Dec. 1, 1885 Jan. 1, 1886	Dec. 31, 1885 Nov. 30, 1886	27 00 330 00	{ Do.
Blacksmith.						
46	George H. Mortimore	2 70 p. d.	Dec. 1, 1885	do	202 50	Virginia.

¹ On leave sixty days without pay.² Telegraph operator, December 1, 1885, to November 1, 1886.

Statement showing the names, compensation, &c., of scientific experts, &c.—Continued.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
<i>Messengers and laborers.</i>						
47	Frederick T. Kayser.....	{ \$432	Dec. 1, 1885	Dec. 31, 1885	\$36 00	} Dist. of Columbia.
		{ 456	Jan. 1, 1886	Aug. 11, 1886	280 04	
48	Albert A. Ashe	{ 324	Dec. 1, 1885	Dec. 31, 1885	27 00	} Do.
		{ 360	Jan. 1, 1886	Aug. 11, 1886	211 09	
<i>Professor.</i>						
49	Samuel T. King	¹ 110	Feb. 2, 1886	Apr. 2, 1886	220 00	Pennsylvania.

¹ For 30 days.

Statement showing the names, compensation, &c., of clerks, messengers, and laborers employed in the office of the Chief Signal Officer of the Army, from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence when appointed.
			From—	To—		
CLASS 4.						
Clerks.						
1	Alexander Ashley.....	\$1, 800	Dec. 1, 1885	Nov. 30, 1886	\$1, 800 00	Pennsylvania.
2	William R. Bushby	1, 800	do	do	1, 800 00	Dist. of Columbia
CLASS 1.						
Clerks.						
3	Joseph E. Leaming	1, 200	do	do	1, 200 00	New Jersey.
4	Zeph Fenno	1, 200	do	do	1, 200 00	Iowa.
5	Belle P. N. Spencer.....	1, 200	do	do	1, 200 00	Michigan.
CLASS C.						
6	Kate L. Roy	1, 000	do	do	1, 000 00	Dist. of Columbia
CLASS D.						
Messengers.						
7	William Messervy.....	840	Dec. 17, 1885	do	804 24	Massachusetts.
8	John Turley	480	Dec. 1, 1885	do	480 00	Dist. of Columbia
Assistant messenger.						
9	Samuel Middleton	720	do	do	720 00	Dist. of Columbia
Laborer.						
10	William Plummer	420	do	do	420 00	Virginia.

Statement showing the names, compensation, &c., of agents, clerks, copy-holders, copyists, printers, messengers, watchmen, and laborer employed in the War Records Office from December 1, 1885, to November 30, 1886.

No.	Name.	Annual salary.	Period of service.		Amount received.	Residence whence appointed.
			From—	To—		
	CLASS B. Agent.					
1	Marcus J. Wright	\$2,000	Dec. 1, 1885	Nov. 30, 1886	\$2,000 00	Tennessee
	CLASS 4. Clerks.					
2	John S. Moody	1,800	do	do	1,800 00	Ohio.
3	Edwin J. Harvie	1,800	do	do	1,800 00	Virginia.
4	F. Collins Smith	1,800	do	do	1,800 00	Maryland.
	CLASS 3. Clerk.					
5	Joseph Dart	1,600	do	do	1,600 00	Ohio.
	Foreman of Printing.					
6	John N. Bovee	1,600	do	do	1,600 00	Pennsylvania.
	Proof-reader.					
7	Francis U. Stitt	1,600	do	do	1,600 00	Dist. of Columbia.
	CLASS 2. Clerk.					
8	Virginia E. Dade	1,400	do	do	1,400 00	Kentucky.
	CLASS I. Clerks.					
9	Sarah H. Purcell	1,200	do	do	1,200 00	New York.
10	Ida R. Morris ¹	1,200	do	do	1,144 57	Texas.
11	Maria Thomas	1,200	do	do	1,200 00	Dist. of Columbia.
	Pressman.					
12	Alfred C. Shaw	1,200	do	do	1,200 00	Dist. of Columbia.
	CLASS C. Compositor.					
13	E. J. Gray	1,000	do	do	1,000 00	Ohio.
	CLASS D. Copy-holders.					
14	Charles F. McDermott	900	Mar. 1, 1886	do	677 50	Dist. of Columbia.
15	Emma Leckie ²	900	Dec. 1, 1885	do	900 00	Do.
	Copyists.					
16	Annie E. Byus	900	do	do	900 00	Maryland.
17	Mary F. Guss	900	Mar. 9, 1886	do	657 50	Pennsylvania.
	Assistant messengers.					
18	Charles Keegin	720	Dec. 1, 1885	do	720 00	Dist. of Columbia.
19	Frank T. Randolph ³	720	do	do	720 00	New Jersey.
	Watchmen.					
20	Samuel S. Noland	720	Apr. 15, 1886	do	452 31	Dist. of Columbia.
21	John P. Morris ⁴	720	Dec. 1, 1885	do	670 11	Do.
	Laborer.					
22	William S. Branson	600	May 27, 1886	do	307 69	Virginia.

¹ 17 days' leave without pay.

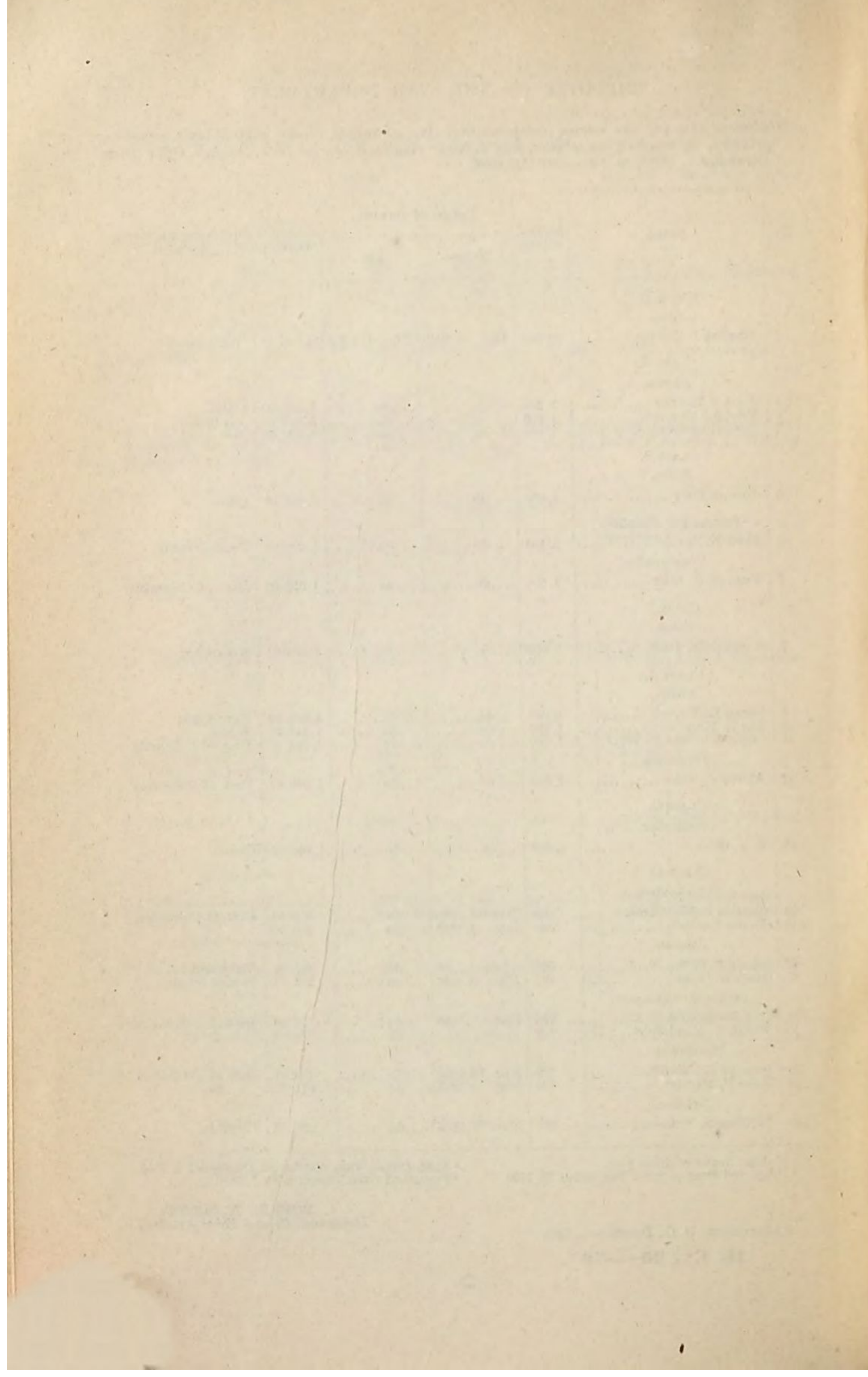
² Promoted from copyist November 22, 1886.

³ Transferred from watchmen December 8, 1885.

⁴ Promoted from laborer May 1, 1886.

ROBERT N. SCOTT,
Lieutenant-Colonel Third Artillery.

WASHINGTON, D. C., December 1, 1886.



CONTINGENT FUND, WAR DEPARTMENT.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A report of the expenditures of the contingent fund, War Department, for the fiscal year ended June 30, 1886.

DECEMBER 14, 1886.—Referred to the Committee on Expenditures in the War Department and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 10, 1886.

The Secretary of War has the honor to transmit to the House of Representatives a statement of the expenditures from the appropriation for the contingent expenses of the War Department and its Bureaus for the fiscal year ending June 30, 1886.

WM. C. ENDICOTT,
Secretary of War

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Contingent expenses, War Department, 1885.

Date.	To whom paid.	On what account.	Amount.
1885.			
July 9	Minnie Lyles	Scrubbing floors	\$10 00
10	Theodore Rue	Post-office plates	4 55
10	Chesapeake and Potomac Telephone Company.	Rent of instruments to June 30, 1885 ..	277 45
10	Phillippina Ganz	Washing towels	18 00
10	James L. Harmon	Subscription to Republican, Post, and Baltimore Sun.	7 80
10	Mutual District Messenger Company..	Rent of instruments	10 00
10	Washington Gas Company	Gas	252 35
11	R. F. Downing & Co	Foreign freightage	4 59
11	J. S. Topham	Repairing harness, &c	102 00
11	do	Carriage-spreads, &c	12 50
11	Adams Express Company	Freightage	88 40
11	Petersen & Childs	Stair plates, matting, &c	132 71
13	George E. Strobel	Tinning roof, &c	84 05

CONTINGENT FUND, WAR DEPARTMENT.

Contingent expenses, War Department, 1885—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
July 14	Baltimore and Ohio Telegraph Company.	Telegrams.....	\$11 38
14	National Electric Company.....	Connecting, &c., electric wires.....	75
14	W. D. Wyvill.....	Stoves.....	66 00
14	Chesapeake and Potomac Telephone Company.	Messages to Baltimore.....	1 25
14	Royce & Marean.....	Putting up and repairing electric bells.....	6 95
14	J. Loring Whittington.....	Official railroad guides.....	4 50
14	Wash. B. Williams.....	Furniture.....	63 00
14	William J. C. Dulany & Co.....	Book.....	10 00
14	R. K. Helphenstine.....	Paste, liniment, &c.....	11 00
15	H. O. Towles.....	Wardrobe and book-case.....	71 00
15	Ruth A. Thompson.....	Washing towels.....	3 85
15	Ira Godfrey.....	do.....	12 69
15	William Ballantyne & Son.....	Books.....	5 00
15	James J. Chapman.....	do.....	12 00
16	Brentano Bros.....	Periodicals.....	3 40
16	Army and Navy Journal.....	Subscription.....	6 00
16	T. J. Edwards.....	Plumbing materials.....	48 50
16	S. J. Haislett.....	Window awnings.....	32 00
17	Hayward & Hutchinson.....	Repairing closets.....	272 28
17	C. G. Thorn.....	Plumbing.....	5 90
17	John A. Baker.....	Repairing lawn-mowers.....	2 25
17	J. W. Boteler & Son.....	Matches.....	2 68
17	George Henry Aschenbach.....	Moving, &c., steam-engine.....	23 44
17	F. M. Draney.....	Cleaning office closet.....	4 50
18	Ira Godfrey.....	Washing towels, &c.....	8 81
18	E. W. Woodruff.....	File-holders.....	455 04
18	E. F. Brooks.....	Plumbing.....	2 75
20	Adams Express Company.....	Freightage.....	1 75
20	Luttrell & Wine.....	Netting and table-cover.....	27 48
20	W. E. Abbott.....	Sand soap.....	1 80
20	Joseph Pulitzer.....	Advertising proposals for stationery.....	22 50
21	P. Blakiston, Son & Co.....	Books.....	16 80
22	William Wesley & Son.....	Foreign publications.....	8 37
22	Publisher of Science.....	Subscription to Science.....	12 00
22	Abram Jones.....	Glazing.....	1 00
22	Ira Godfrey.....	Washing towels.....	8 60
22	E. Morrison.....	Binders' materials.....	254 67
23	The MacKellar, Smiths & Jordan Company.	Type.....	140 20
23	Army and Navy Journal.....	Subscription.....	6 00
23	J. W. Bouton, agent.....	Books.....	15 00
23	S. H. Stutzman.....	Subscription to New York Tribune.....	2 60
24	James B. Lambie.....	Hardware.....	14 91
24	George Ryneal, jr.....	Varnish-brushes.....	9 12
22	Baltimore and Ohio Telegraph Company.	Telegrams.....	5 08
24	do.....	do.....	14 02
27	E. W. Woodruff.....	File-holders.....	93 72
28	George A. Shehan.....	Lumber.....	22 26
29	National Republican.....	Subscription.....	1 50
29	M. W. Beveridge.....	Hair sweeps, &c.....	4 64
Aug. 1	Knickerbocker Subscription Agency.....	Subscription to magazines, &c.....	27 96
1	A. P. McElroy.....	Gold frame, mat, &c.....	17 00
3	W. B. Moses & Son.....	Furniture, &c.....	1,091 27
3	F. M. Draney.....	Cleaning office closet.....	1 50
4	Felix Flügel.....	Foreign magazines.....	6 12
7	Western Union Telegraph Company.....	Telegrams.....	99 12
7	do.....	do.....	21 66
10	Royce & Marean.....	Electric clock, &c.....	43 00
11	Army and Navy Register.....	Advertising proposals, miscellaneous supplies.....	5 50
11	do.....	Advertising proposals, stationery.....	4 76
11	W. B. Moses & Son.....	Water-cooler.....	4 50
11	Katharine Schaeffer, administratrix.....	Paste, repairing chairs, &c.....	22 75
11	H. L. Pelouze & Son.....	Lye brush.....	75
12	William Ballantyne & Son.....	French periodicals.....	14 46
14	J. S. Topham.....	Rubber coats, storm covers, &c.....	44 00
15	James H. Byram.....	Pigeon-hole case, &c.....	42 60
17	Leopold Bossaungé.....	Foreign publications.....	19 13
17	Houghton, Mifflin & Co.....	Postal Guides.....	95
18	William Wesley & Son.....	Foreign publications.....	61 05
20	F. A. Brockhaus.....	do.....	113 12
28	The Army and Navy Register.....	Advertising proposals, fuel.....	4 40
28	do.....	Advertising proposals, ice.....	3 40
Sept. 10	Renben P. Barnes.....	Taking up carpets.....	2 50
11	John Wiley & Sons.....	Book.....	1 25
16	Baltimore and Ohio Express.....	Freight.....	55
22	W. S. Jenks & Co.....	Registers.....	10 50

CONTINGENT FUND, WAR DEPARTMENT.

3

Contingent expenses, War Department, 1885—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Nov. 21	W. H. Hoeke	Carpets, &c.	\$74 13
27	T. H. S. Hamersley	Subscription to "United Service"	3 00
Dec. 10	William J. Hooper	Advertising proposals, stationery	11 20
10	do	Advertising proposals, miscellaneous supplies.	11 20
21	F. A. Brockhaus	Foreign periodicals	15 83
26	George W. Knox	Hauling	1 00
1886.			
Jan. 15	The Railway Age Publishing Company.	Subscription to Railway Age	4 00
15	George A. Shehan	Lumber	20 53
20	B. F. Stevens	Foreign publications	34
Feb. 2	Charles F. Moore	Alcohol	2 75
23	William Wesley & Son	Foreign publications	8 36
	Total		4,652 08

Balance of appropriation..... \$4,939 92
Amount expended..... 4,652 08

Balance..... 287 84
Deposited in Treasury by certificate No. 35788..... 287 84

Contingent expenses, War Department, 1886.

Date.	To whom paid.	On what account.	Amount.
1885			
July 10	Mortimore King	Whitewashing	\$3 50
11	Presley Berry	do	2 25
13	Abram Jones	Scrubbing building	20 00
14	Maria Jackson	Staining floors	7 00
16	Ferdinand Martin	Repairing chairs	7 75
16	Brentano Bros	Boston Daily Advertiser	3 75
17	John Tweedale, notary public	Depositions to contracts	8 25
18	F. A. Conrad	Carpentry	50 55
18	Brentano Bros	Subscription New York Tribune	3 00
22	F. W. Bardua	Compiling catalogue	150 00
23	City post-office	Rent of post-office box	2 00
24	S. J. Haislett	Window awnings	9 00
25	Samuel G. Eberly	Car-tickets	54 50
25	John T. Donn & Son	Furniture	109 50
25	James L. Harmon, agent	Subscription Baltimore Sun	13 20
25	National Republican	Subscription	48 00
25	Washington Post	do	60 00
27	H. Rosendale	Grinding shears and paper-cutter	5 00
27	Cooke & Co.	Rubber hose	28 90
27	Military Service Institution	Books (Sea-Coast Defenses)	37 50
27	Wyckoff, Seamans & Benedict	Remington type-writer	107 50
28	R. R. Bowker	Subscription to Publishers' Weekly	3 20
30	John Collins	Repairing bell	3 00
31	Macmillan & Co	Dictionary	2 44
Aug. 1	Samuel Lloyd	Sprinkling pavement	6 00
1	T. J. Edwards	Plumbing	74 30
1	F. A. Conrad	Carpentry	30 00
1	Stephenson & Bro	Wood and coal	3,198 50
1	Annie L. Datcher	Washing towels	13 05
1	Elizabeth Denham	do	2 97
1	Susannah Baker	do	62 97
3	Lucy A. Strother	do	3 93
3	N. T. Metzger & Bro	Concentrated lye	32 20
3	Abram Jones	Glazing	1 50
4	W. H. Porter	Caligraph, cabinets, &c.	190 00
5	E. P. Cross	Livery of horses	40 00
5	Charles Haerle	Car fare	2 25
5	Murray & Barker	Shoeing horses	23 00
6	A. C. & G. H. Demonet	Flour for paste	1 00
6	James J. Chapman	Books	49 00
6	J. Loring Whittington	Encyclopedia Britannica	10 00
7	Samuel G. Eberly	Car tickets	11 85
7	James Nelson	Cleaning flue	6 00
7	Murray & Barker	Shoeing horses	8 00
10	Ruth A. Thompson	Washing towels	3 17

CONTINGENT FUND, WAR DEPARTMENT.

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Aug. 10	Washington Gas Company.....	Gas	\$186 40
10	M. W. Beveridge.....	Whitewash brushes, lamps, &c.....	77 58
11	M. E. Mann.....	Annual Cyclopaedia '61 to '75, inclusive.....	94 00
11	do.....	do.....	6 00
11	Barbour & Hamilton.....	Candles.....	9 00
11	New York News Company.....	Subscription to periodicals.....	198 25
12	William Ballantyne & Son.....	Mitchell's Atlas.....	9 00
12	F. A. Schneider.....	Hardware.....	96 82
12	Army and Navy Register.....	Subscription to Army and Navy List and Register.....	102 00
12	Solon Palmer.....	Soap.....	240 00
13	H. F. Reh.....	Draping building.....	25 00
13	C. D. Collins.....	Screens.....	251 00
13	Rowland A. Robbins.....	Feather dusters.....	133 80
13	Warren Hall.....	Polishing-soap.....	1 75
13	J. Loring Whittington.....	Official Railroad Guide.....	9 00
13	E. J. Edwards.....	Plumbing.....	60 00
14	J. S. Topham.....	Repairing harness, &c.....	12 50
14	New York News Company.....	Subscription to World and Tribune.....	22 50
14	Mutual District Messenger Company.....	Rent of instruments.....	10 00
14	Katharine Schaefer, administratrix.....	Paste.....	4 00
14	do.....	Draping building.....	120 00
15	James B. Lambie.....	Hardware.....	13 33
15	James H. Byram.....	Building shed, repairing wall, &c.....	115 25
15	Samuel G. Eberly.....	Car-tickets.....	39 50
15	Royce & Marean.....	Repairing electric bells, &c.....	11 50
15	George Ryneal, jr.....	Oil, turpentine, &c.....	36 81
17	Theodore Berendsohn.....	Book.....	2 50
17	New York News Company.....	Subscription to New York Times, World, and Herald.....	32 00
18	J. W. Boteler & Son.....	Matches and sweep-handles.....	4 62
18	Franklin Institute.....	Journal of institute.....	87 05
19	R. F. Hunter.....	Hand grenades.....	30 00
19	Pay-roll.....	Moving records, &c.....	22 50
20	F. A. Conrad.....	Slat-door, &c.....	22 90
20	Ira Godfrey.....	Washing towels.....	2 81
20	Naval Storekeeper's Department.....	Text-book of Ordnance.....	6 00
21	Charles B. Fuse.....	Papering, &c.....	145 00
22	James Fitzpatrick.....	Ash-pit.....	27 50
22	M. M. Magruder.....	Laying floor, &c.....	32 45
22	Benjamin Waines.....	Charcoal.....	2 40
22	Cadwalader Evans.....	Burners for gas.....	1 00
22	T. J. Edwards.....	Steam-fitting.....	332 56
22	Smith Thompson.....	File-holders.....	426 00
24	R. K. Helphenstine.....	Chamois skins, soap, &c.....	224 80
24	William O. Saville.....	Inspecting boilers.....	13 60
24	R. K. Helphenstine.....	Sponge.....	341 00
25	H. L. Pelouze & Son.....	Printing material.....	16 00
26	J. D. Free, jr.....	Books.....	8 00
26	R. Goldschmid.....	Spittoons.....	115 05
26	Petersen & Childs.....	Carpets, matting, rugs, &c.....	143 45
26	R. C. M. Burton.....	Draping building (U. S. Grant).....	100 00
27	John T. Donn & Son.....	Furniture.....	107 25
27	W. W. Tupper & Co.....	Furnace grates.....	33 58
28	J. W. Boteler & Son.....	Matches.....	8 25
28	E. J. Brooks & Co.....	Screws.....	10 78
28	D. Van Nostrand.....	Book.....	2 50
29	F. A. Conrad.....	Packing-boxes.....	15 60
29	James C. Newton.....	Painting.....	118 00
29	A. P. McElroy.....	Photograph frame, &c.....	8 50
29	John A. Baker.....	Repairing lawn-mower.....	2 55
29	Pay-roll.....	Moving records.....	10 50
31	Union Mining Company.....	Lining boilers.....	123 00
31	Annie L. Datcher.....	Washing towels.....	13 80
31	Susannah Baker.....	do.....	47 70
31	Ruth A. Thompson.....	do.....	3 98
31	Elizabeth Denham.....	do.....	3 88
31	Lucy A. Strother.....	do.....	2 85
31	S. W. Lloyd.....	Repairing furniture, &c.....	108 81
31	Stephenson & Bro.....	Fuel.....	819 57
Sept. 2	Samuel Lloyd.....	Sprinkling street.....	12 00
3	E. P. Cross.....	Livery of horses.....	40 00
4	Agnes E. Burton.....	Washing towels, &c.....	8 75
5	Pay-roll.....	Repairing furnaces, &c.....	51 00
5	James Fitzpatrick.....	Repairing fire-boxes.....	138 50
5	James Anglim & Co.....	Books.....	14 00
5	John McDermott & Bro.....	Repairing mail wagon, &c.....	62 50
5	George A. Shehan.....	Lumber.....	231 54
5	do.....	do.....	2 10
5	E. W. Woodruff.....	File-holders.....	42 00

CONTINGENT FUND, WAR DEPARTMENT.

5

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Sept. 5	E. F. Brooks.....	Globes and canopies.....	\$9 98
5	George Henry Aschenbach.....	Removing, &c., steam-engine.....	23 84
5	M. E. Mann.....	Annual Cyclopedia, volume 9.....	8 00
5	Charles F. Moore.....	Carbolic acid, &c.....	1 20
5	Abram Jones.....	Painting cases.....	5 00
7	M. W. Beveridge.....	Ice-pitcher.....	10 00
7	Samuel Wilson.....	Books.....	9 50
7	George W. Knox.....	Freight.....	14 00
8	W. H. Morrison.....	Books.....	165 78
8	J. F. Jarvis.....	Photographs.....	3 50
8	United States Government Advertiser.....	Books.....	2 00
9	Thomas G. Hood.....	Soap.....	95 00
10	Washington Gas Company.....	Gas.....	201 05
10	F. A. Schneider.....	Hardware.....	22 15
10	Petersen & Childs.....	Cocoa matting, &c.....	477 07
10	Murray & Barker.....	Shoeing horses.....	9 50
10	James B. Lambie.....	Hardware.....	12 10
11	Adams Express Company.....	Expressage.....	139 90
11	Stephenson & Bro.....	Cleaning yard.....	9 75
11	George E. Strobel.....	Repairing roof, furnace, &c.....	161 35
11	William Ballantyne & Son.....	Book.....	6 00
11	R. K. Helphenstine.....	Carbolic acid.....	30 00
11	Katharine Schaefer, administratrix.....	Paste.....	2 50
11	B. Westermann & Co.....	Book.....	2 04
11	Robert Leitch & Sons.....	Iron doors, &c.....	30 00
11	William M. Bradley & Bro.....	Atlas.....	27 00
12	W. H. Porter.....	Rack, &c., for caligraph.....	2 15
12	N. W. Ayer & Son.....	Newspaper annual.....	3 00
12	John Tweedale.....	Depositions to contracts.....	1 00
12	Baltimore and Ohio Telegraph Com- pany.....	Telegrams.....	9 19
12	George Ryneal, jr.....	Paint, oils, &c.....	15 20
12	William J. C. Dulany & Co.....	Book.....	1 00
14	Mutual District Messenger Company.....	Rent of instruments.....	10 00
14	Ferdinand Martin.....	Repairing revolving chair.....	1 25
14	E. Morrison.....	Telephone trumpets.....	50 00
15	John T. Donn & Son.....	Repairing furniture.....	11 50
15	M. W. Beveridge.....	Student lamps, &c.....	46 09
15	W. B. Moses & Son.....	Furniture.....	207 81
16	Baltimore and Ohio Express.....	Freightage.....	1 80
17	George R. Hall.....	Repairing mail wagon.....	45 00
18	James A. Nelson.....	Cleaning chimneys.....	10 00
18	H. I. Hart.....	Insect powder.....	134 00
18	C. Schneider.....	Norton door-check.....	4 75
18	Wyckoff, Seamans & Benedict.....	Repairing type-writer.....	1 25
19	Burton Rudd.....	Scrubbing.....	75
19	William W. Farr.....	Clock.....	7 50
19	Thomas Somerville & Sons.....	Steam fittings.....	2 96
19	John E. Cox.....	Leather chair-seats.....	115 20
22	W. S. Thompson.....	Insect powder and bellows.....	3 25
22	The Burr Index Company.....	Combination index.....	8 50
23	James Fitzpatrick.....	Repairing furnaces.....	52 20
23	R. Nevitt.....	Whip.....	1 00
23	J. W. Boteler & Son.....	Repairing pitcher.....	2 25
23	Adams Express Company.....	Freight.....	4 65
23	Thomas E. Baden.....	File-holders.....	15 30
23	W. W. Tupper & Co.....	Furnace grates.....	85 00
25	M. W. Beveridge.....	Tumblers.....	10 78
25	Gates Manufacturing Company.....	Table.....	18 00
26	T. J. Edwards.....	Stable-gutter grates.....	27 00
26	M. J. Wine.....	File-boards.....	12 50
26	E. E. Jackson & Co.....	Sawdust.....	1 50
26	do.....	do.....	75
26	James Fitzpatrick.....	Cleaning furnace, &c.....	38 75
28	A. C. and G. H. Demonet.....	Cornstarch.....	60
29	Samuel G. Eberly.....	Car-tickets.....	29 62
29	A. P. McElroy.....	Hanging pictures, &c.....	45 65
30	Susannah Baker.....	Washing towels.....	59 40
30	Mary Gannon.....	do.....	183 45
30	Mary A. Loveless.....	do.....	22 20
30	Lucy A. Strother.....	do.....	2 60
30	Elizabeth Denham.....	do.....	6 42
30	Phillippina Ganz.....	do.....	18 00
30	Agnes E. Burton.....	do.....	7 62
30	Z. D. Gilman.....	Brushes and thermometers.....	54 47
30	Thomas Burgess.....	Kalsomining, glass, &c.....	7 50
30	E. P. Cross.....	Livery of horses.....	40 00
30	E. J. Brooks & Co.....	Wood-screws.....	1 88
30	W. S. Thompson.....	Sweet oil.....	3 60
30	E. W. Woodruff.....	File-holders.....	79 60

CONTINGENT FUND, WAR DEPARTMENT.

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Sept. 30	Catharine Schafer, administratrix.....	Draping buildings	\$75 43
30	Thomas Somerville & Sons.....	Steam fittings	14 19
30	J. W. Boteler & Son.....	Water cooler, stand, &c.....	49 25
30	Murray & Barker.....	Shoeing horses.....	13 25
30	do.....	do.....	13 25
30	F. W. Christern.....	Books.....	160 00
30	E. Steiger & Co.....	Book.....	9 90
30	J. F. Spelshouse, agent.....	Papering, &c.....	6 00
30	John S. Snedeker & Co.....	Oil and axle grease.....	3 75
30	do.....	Grease.....	7 50
30	James Anglim & Co.....	Books.....	29 00
30	J. Loring Whittington.....	Magazines.....	10 50
30	James J. Chapman.....	Books, &c.....	4 75
30	Washington Gas Company.....	Gas.....	206 30
30	Western Union Telegraph Company..	Telegrams.....	51 18
30	do.....	do.....	30 48
30	New York News Company.....	The Engineer.....	25
30	John A. Baker.....	Repairing lawn-mowers, &c.....	3 25
30	George A. Shehan.....	Lumber.....	180 80
30	R. K. Helphenstine.....	Paste, brushes, &c.....	10 00
30	M. W. Beveridge.....	Filter, basket and brush.....	10 60
30	John T. Down & Son.....	Furniture.....	88 50
30	E. Morrison.....	Cabinet fixtures and ink.....	10 00
30	William W. Farr.....	Regulating, &c., clocks.....	38 00
30	Abram Jones.....	Sign and glazing.....	7 25
30	Chesapeake and Potomac Telephone Company.	Rent of instruments.....	272 75
30	Army and Navy Journal.....	Cover for Army and Navy Journal....	1 25
30	Hayward & Hutchinson.....	Fire-bricks, mica, &c.....	20 11
30	W. H. Morrison.....	Books.....	22 70
30	do.....	do.....	4 75
30	James H. Byram.....	Carpentry.....	132 53
30	E. G. Wheeler.....	Tallow, &c.....	90
30	do.....	Waste, chair-seats, &c.....	22 83
30	Wyckoff, Seamans & Benedict.....	Type-writer, &c.....	97 90
30	George Ryneal, jr.....	Glass, putty, oil, &c.....	23 24
30	Mutual District Messenger Company..	Rent of instruments.....	10 00
30	James B. Lambie.....	Hardware.....	51 41
30	E. E. Jackson & Co.....	Lumber.....	35 28
30	R. Beresford.....	Printers' materials.....	10 00
30	W. B. Moses & Son.....	Carpet-sweeper and chair-seat.....	7 00
30	H. L. Pelouze & Son.....	Printers' materials.....	3 96
Oct. 3	Annie Redden.....	Washing windows, &c.....	15 00
3	Annie L. Datcher.....	Washing towels.....	10 05
5	Charles Haerle.....	Car-fare.....	4 71
6	John F. Paret.....	Books, paper-file, and glue.....	17 90
7	Moore & Leding.....	Winding and repairing clocks.....	50 00
8	Samuel Lloyd.....	Sprinkling street.....	12 00
10	Katharine Shaefer, administratrix.....	Paste.....	6 00
12	Royce & Marean.....	Electric bell and wire.....	3 30
13	T. J. Edwards.....	Plumbing.....	30 00
14	W. D. Wyvill.....	Repairing, &c., stoves.....	28 50
14	do.....	Furnace-pipes and repairing roof.....	25 00
14	The Burr Index Company.....	Indexes.....	8 00
15	Great Falls Ice Company.....	Ice.....	718 07
16	Stephenson & Bro.....	Fuel.....	933 96
16	J. S. Topham.....	Straps, lap-robe, &c.....	90 00
16	George C. Scott.....	Carpentry.....	37 50
16	Adams Express Company.....	Freight.....	49 65
17	James C. Newton.....	Painting, &c.....	129 75
17	F. A. Conrad.....	Carpentry.....	47 00
17	R. F. Hunter, attorney.....	Fire-extinguishers.....	40 00
17	Otto L. Wolfsteiner.....	Glazing.....	4 50
17	George E. Brett.....	Books.....	2 44
20	Minnie Gauley.....	Scrubbing.....	3 75
20	Margaret Hayes.....	do.....	3 75
23	George A. Shehan.....	Lumber.....	49 50
24	J. G. Weaver & Son.....	Laying carpets.....	62 76
24	J. F. Spelshouse, agent.....	Papering, &c.....	65 00
24	Frank S. Lynch, agent.....	Cylinder oil-cups.....	25 00
24	Western Union Telegraph Company..	Telegrams.....	44 53
24	F. A. Conrad.....	File-cases.....	50 62
26	F. A. Schneider.....	Hardware.....	89 06
26	F. A. Benchler.....	File-straps.....	51 00
26	W. H. Rapley.....	Repairing roof.....	20 20
26	do.....	Galvanized pans.....	9 50
26	John F. Paret.....	Atlas.....	16 00
26	E. E. Jackson & Co.....	Shelving.....	35 28
27	John McDermott & Bro.....	Repairing mail wagon.....	15 75
27	Washington city post-office.....	Rent post-office box.....	2 00

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Oct. 27	George R. Hall	Repairing wheels of mail wagon	\$6 00
28	MacKellar, Smiths & Jordan Co.	Printers' supplies	199 00
28	Murray & Barker	Shoeing horses	18 00
29	S. J. Haislett	Taking down awnings	24 28
30	Charles Becker	Soap	58 80
31	Baltimore and Ohio Telegraph Com- pany.	Telegrams	7 17
31	H. L. Pelouze & Son	Printers' supplies	3 50
31	Ira Godfrey	Washing towels	7 71
31	Lucy A. Strother	do	3 30
31	Susannah Baker	do	50 15
31	Annie L. Datcher	do	11 40
31	Elizabeth Denham	do	8 30
31	George Cartner	Encyclopædia Britannica, vol. 19	18 00
31	J. G. Weaver & Son	Laying carpet	63 33
31	W. H. Porter	Caligraph	127 00
Nov. 3	Abram Jones	Glazing and painting	20 80
4	Geo. W. Lange	Repairing stationery case	31 00
4	John T. Donn & Son	Furniture	120 50
4	Caleb Washington	Cleaning horse sheaths	2 00
5	Baldwin Bros. & Co.	Foreign expressage	17 95
5	E. P. Cross	Livery of horses	40 00
5	Samuel G. Eberly	Car tickets	35 00
5	E. W. Woodruff	File-holders	341 70
6	John McDermott & Bro.	Repairing mail wagon	164 25
7	E. M. Edwards	Gas-pipe	3 43
7	Geo. W. Lange	Repairing, &c., desks	43 50
7	Samuel Lloyd	Sprinkling street	12 00
7	Chas. Haerle	Car fare	2 43
7	Geo. E. Strobel	Stoves, &c.	35 25
7	James Nelson	Cleaning flues	15 75
7	Baldwin Bros. & Co.	Foreign expressage	73 38
9	R. K. Helphenstine	Rat poison, &c.	2 25
9	W. H. Hoeke	Matting	104 00
9	F. P. Little	Reader's rests	9 70
9	Washington Gas Company	Gas	249 20
9	A. P. McElroy	Picture frames, &c.	9 50
10	Royce & Marean	Changing, &c., electric bells, &c.	9 15
10	K. Nicolaides	Screens	8 00
11	Otis Brothers & Co.	Piston-rod, &c., for engine	19 75
11	F. A. Schneider	Hardware	79 21
12	Petersen & Childs	Carpets, shades, &c.	850 16
12	Geo. Ryneal, jr.	Paints, oils, varnish, &c.	42 02
12	Stevenson & Bro.	Fuel	305 00
13	F. H. Towne	Poisoning Museum exhibits	20 85
13	E. G. Wheeler	Stable brooms	1 50
13	E. H. Ruffner	Book	1 25
14	W. B. Moses & Son	Furniture	131 40
14	F. A. Conrad	Sash-door, ladder, &c.	15 50
16	M. W. Beveridge	Dusters, hods, &c.	8 90
16	Pettit & Dripps	Iron tank	319 86
16	E. M. Edwards	Plumbing	33 86
17	J. W. Boteler & Son	Slop-jars and matches	15 75
18	W. H. Morrison	Books	12 00
18	Luttrell & Wine	Crêpe, sheeting, &c.	35 28
18	Mutual District Messenger Company ..	Rent of instruments	11 20
18	Ferdinand Martin	Repairing furniture	5 50
18	Benjamin Waines	Charcoal	6 00
18	Annie Redden	Washing windows	22 20
19	Murray & Barker	Shoeing horses	24 25
19	James B. Lambie	Hardware	30 20
19	E. F. Brooks	L. H. bibb	2 75
19	Alexander Anderson	Washing windows	6 38
21	Albert Jacobi	Caligraph	85 00
21	James Fitzpatrick	Brickwork	49 00
23	John T. Donn & Son	Furniture	108 75
24	James H. Bryan	Carpentry	106 35
24	Adams Express Company	Freight	130 87
25	Alexander Anderson	Scrubbing	4 20
28	F. A. Beuchler	Repairing harness	2 50
28	The National Electric Company	Changing electric wires	75
28	Samuel G. Eberly	Car tickets	35 55
28	W. H. Porter	Repairing caligraphs	16 00
30	James Linksey	Kalsomining, &c.	43 00
30	Susannah Baker	Washing towels	50 92
30	Annie L. Datcher	do	13 80
30	Lucy A. Strother	do	2 98
30	Elizabeth Denham	do	6 18
30	Agnes Burton	do	5 95
30	R. K. Helphenstine	Castor oil	75

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Dec. 3	Lawrence, Wilde & Co	Furniture	\$176 88
3	W. H. Hoeke	Cleaning carpet and rugs	8 37
3	Stephenson & Bro.	Fuel	88 74
4	Abram Jones	Painting, &c.	25 00
4	Charles Haerle	Car fare	2 19
4	E. W. Woodruff	File-holders and cases	1,245 00
4	Fuse Brothers	Papering, &c	30 00
4	E. G. Wheeler	Chair seats	60
5	Albert Jacobi	Caligraph cabinet	47 50
5	E. P. Cross	Livery of horses, &c	43 00
5	John S. Snedeker & Co	Cylinder oil	27 50
5	Theodore Rue	Engraved, &c., plates	3 20
5	H. L. Pelouze & Son	Lye-brushes	3 00
5	John Collins	Locksmith work	7 60
7	George A. Shehan	Lumber	19 90
7	W. E. Abbott	Salt	95
7	Agnes Burton	Washing towels, &c.	9 02
8	William W. Moore, treasurer	Car tickets	41 67
8	Abram Jones	Varnishing floor	3 75
8	Western Union Telegraph Company	Telegrams	22 57
8	J. S. Topham	Repairing harness, &c.	65 00
9	Luttrell & Wine	Canvas, cotton, &c.	31 07
9	James B. Lambie	Hardware	11 58
9	Hillman Devars	Storing coal	2 43
9	John T. Donn & Son	Shelving, case, &c	86 50
10	A. W. Hodgkins	Maps	50 00
10	George Watts & Son	Wood baskets	7 00
10	Murray & Barker	Shoeing horses	15 25
10	Harris & Shafer	Ice pitcher	12 00
10	Baldwin Bros. & Co	Foreign freightage	28 16
10	Washington Gas Company	Gas	310 85
10	J. W. Boteler & Son	Brooms and slop jars	41 00
10	Easton & Rupp	Portfolio	3 25
11	George E. Strobel	Repairing stoves, &c.	499 23
11	M. W. Beveridge	Lamp, soap dishes, &c	8 40
11	Woodward & Lothrop	Draping building	7 60
11	Katharine Schaefer, administratrix	Paste	12 50
11	O. Schneider	Repairing door-check	1 50
12	James B. Lambie	Hardware	6 03
12	Army and Navy Journal	Subscription to June 30, 1886	5 50
12	George Ryneal, jr	Paint-brushes, drop-light, &c.	17 78
12	T. H. S. Hamersly	Subscription to United Service	4 00
12	W. H. Morrison	Law books	11 50
12	James J. Chapman	Encyclopædia	12 00
12	do	Basket for ink and mucilage	2 75
12	J. Loring Whittington	Official railroad guides, &c	20 50
12	The Burr Index Company	Indexes	58 00
14	J. W. Bouton, agent	Book	7 50
14	The Military Service Institution	Subscription to Journal	50 00
14	George Cartner	Encyclopædia Britannica, vol. 19	6 00
14	Wilmarth & Edmonston	Filter	12 00
14	F. A. Conrad	Carpentry	22 00
14	Schleicher, Schuman & Co	Gum rings	63
14	Francis & Loutrell	Printers' roller composition	30 00
14	Mutual District Messenger Company	Rent of instruments	10 60
14	W. B. Moses & Son	Chair and screen	8 50
14	Peter Wright & Sons	Freightage	3 75
15	The Publisher of Science	Subscription	5 05
15	Brentano Bros	Book	6 00
15	do	Subscription to Boston Advertiser and books	4 50
15	William Ballantyne & Son	Dictionary	5 00
15	E. F. Brooks	Drop-lights	22 00
15	Adams Express Company	Freightage	28 60
16	John W. Thomas	Manure	10 00
16	National Railway Publishing Company	Subscription to Official Guide	4 00
17	R. Von Gluemer	Maps	15 00
17	Annie Redden	Washing windows	36 80
17	George W. Lange	Desk and top	76 50
18	Samuel K. Brown	Oil-cloth	55
18	George W. Knox	Freightage	3 08
18	Otis Bros. & Co	Rubber bumpers	1 80
19	William Luckett	Hauling wood	1 50
21	F. A. Brockhans	Foreign periodical	1 39
21	J. William Jones	Subscription Southern Historical Society papers	1 50
21	August Donath, agent	Evening Star	5 28
22	A. W. Hodgkins	Maps	55 00
22	Raleigh Tunstall	Storing coal	1 13
22	Roginski & Lewis	Glazing	1 25

CONTINGENT FUND, WAR DEPARTMENT.

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Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1885.			
Dec. 22	E. M. Edwards	Plumbing	\$45 60
23	F. A. Schneider	Hardware	21 50
23	J. Karr	Disks for clock	3 00
23	John T. Dunn & Son	Furniture	195 25
23	Julia Tennyson	Washing towels	9 00
24	John McDermott & Bro	Repairing mail wagons, and wheelbarrow.	127 50
24	Petersen & Childs	Carpets, rugs, &c	201 35
24	Royce & Marean	Connecting bell wire	1 00
26	Z. D. Gilman	Cleaning brushes	3 60
30	William R. Riley	Thread case	5 00
30	E. Morrison	Paste, printing ink, &c	29 50
30	Luttrell & Wine	Cambric, cotton, &c	105 94
30	Annie L. Datcher	Washing towels	13 50
31	Susannah Baker	do	62 85
31	Mary A. Loveless	do	21 15
31	Lucy A. Strother	do	2 65
31	Elizabeth Denham	do	6 60
31	B. F. Avery & Sons	Subscription Southern Bivouac	2 00
31	J. E. Smith	Grant's memoirs	8 00
31	J. S. Topham	Mail bags, robe, &c	22 75
31	do	Repairing harness	11 73
31	H. F. Reh	Draping building	20 00
31	Western Union Telegraph Company	Telegrams	20 31
31	Abram Jones	Painting, &c	54 30
31	John McDermott & Bro	Repairing mail wagons	186 00
31	do	do	56 25
31	John Brady	Storing wood	75
31	Singleton & Fletcher	Draping building	30 00
31	Royce & Marean	Electric bells and batteries	8 48
31	H. L. Pelouze & Son	Composition rollers	2 00
31	The National Electric Company	Altering electric wires	1 00
31	T. J. Edwards	Plumbing, &c	101 99
31	H. C. & G. H. Demonet	Sand soap	7 50
31	E. W. Woodruff	File holders	35 60
31	E. P. Cross	Livery of horses	40 00
31	Philippina Ganz	Washing towels	18 00
31	George E. Strobel	Repairing stove, &c	24 50
31	Charles Haerle	Car fare	2 22
31	Theodore Rue	Number plates	27 50
31	E. G. Wheeler	Cotton waste	2 78
31	Samuel G. Eberly	Car tickets	11 85
31	F. H. Conrad	Weather strips	3 00
31	W. W. Tupper & Co	Grate-bars	17 82
31	Rowland A. Robbins	Feather dusters	133 80
31	Washington Gas Company	Gas	364 10
31	E. C. E. Johnson	Washing towels	22 72
31	Chesapeake and Potomac Telephone Company.	Rent of instruments	276 60
31	James B. Lambie	Hardware	95 24
31	John Collins	Opening lock, &c	2 00
1886.			
Jan. 6	W. H. Boyd	City directories	300 00
8	Thomas Jackson	Storing fuel	4 00
11	Robert Hawkins	Removing snow	2 00
11	Luttrell & Wine	Draping building, &c	41 75
11	James Fitzpatrick	Repairing stove and furnace	26 00
11	John Bird	Removing snow	2 25
11	R. C. M. Burton	Draping building, &c	129 95
11	Manhattan Brass Company	Brass fenders and fire irons	76 57
11	E. F. Brooks	Fire set, drop-lights, &c	32 20
11	Ira Godfrey	Washing towels	8 64
12	Agnes E. Burton	do	7 06
12	Mary Gannon	do	150 50
12	James H. Byram	File cases	65 75
12	Stephenson & Bro	Fuel	165 42
13	Goodyear Rubber Company	Zinc-lined treads	62 22
13	Charles F. Moore	Transfer ink	1 00
13	Alfred Worch	Clock	3 75
13	Ferdinand Martin	Repairing furniture	4 00
14	Washington City post-office	Rent of post-office box	2 00
14	John T. Donn & Son	Furniture	19 00
14	Murray & Barker	Horseshoeing	37 75
14	P. Hanson Hiss & Co	Papering room	8 75
14	Charles I. Kellogg	Whisks and soda	29 98
14	Burr Index Company	Combination indexes	53 50
15	George A. Shehan	Lumber	91 56
15	Railway Age Publishing Company	Subscription to Railway Age	4 00
15	W. D. Wyvill	Repairing boiler, &c	3 50
15	Thomas G. Hood	Rubber mats, &c	66 39

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
Jan. 15	F. A. Schneider.....	Hardware.....	\$21 92
15	A. P. McElroy.....	Frames for photos.....	9 25
15	Katharine Schaefer, administratrix.....	Paste.....	6 25
15	M. W. Beveridge.....	Wood-basket, gas-lighter, &c.....	12 10
16	George Mitchell.....	Storing coal.....	2 50
16	Samuel G. Eberly.....	Car tickets.....	86 10
18	J. W. Boteler & Son.....	Water buckets.....	13 00
18	do.....	Matches.....	1 34
18	John T. Donn & Son.....	Furniture.....	211 50
18	Petersen & Childs.....	Rugs, carpets, &c.....	105 05
18	Otto L. Wolfsteiner.....	Repairing sky-light.....	4 50
18	Charles S. Hart.....	Carpentry.....	54 00
18	National Electric Company.....	Putting up time detector.....	60 00
18	William H. Boyd.....	City Directory.....	5 00
18	Thomas Jackson.....	Storing fuel.....	9 61
18	Julius Lansburgh.....	Chiffonier.....	16 10
19	George Henry Aschenbach.....	Sharpening knife.....	2 00
19	Simpson & Guy.....	Stove and fixtures.....	39 30
20	James Halloran.....	Hauling fuel.....	4 00
20	Thomas Somerville & Sons.....	Steam fittings.....	1 35
21	Jay Stone.....	Notarial fees.....	50
21	Thomas Jackson.....	Storing coal.....	9 25
21	George E. Strobel.....	Stove, pipe, &c.....	28 85
22	William W. Farr.....	Repairing, &c., clocks.....	62 00
23	Great Falls Ice Company.....	Ice.....	530 01
23	Moore & Leding.....	Winding, &c., clocks.....	50 00
23	George Mitchell.....	Storing fuel.....	9 30
26	Ward & Cunningham.....	Repairing furnace.....	5 00
26	Robert Hawkins.....	Removing snow.....	2 00
27	Adams Express Company.....	Freightage.....	17 05
27	F. W. Stone.....	Distributing Surgeon-General Office publications.....	180 96
27	John Bird.....	Removing snow.....	1 10
27	S. J. Haislett.....	Taking down awnings.....	5 52
28	E. Morrison.....	Printer's ink, shears, &c.....	14 60
29	Smith Thompson.....	File-holders.....	106 50
30	George Mitchell.....	Storing fuel.....	3 75
30	J. E. Smith.....	Books.....	18 00
30	W. B. Moses & Son.....	Chairs and screen.....	28 50
30	T. J. Edwards.....	Plumbing.....	84 00
30	Susannah Baker.....	Washing towels.....	52 27
30	Elizabeth Denham.....	do.....	7 80
Feb. 1	J. E. Smith.....	Books.....	4 50
1	Mutual District Messenger Company.....	Rent of instrument.....	10 00
1	James Anglim & Co.....	Books.....	37 55
1	B. F. Stevens.....	Foreign periodicals.....	2 90
2	W. E. Abbott.....	Flaxseed meal.....	1 00
2	Chas. C. Soule.....	Book.....	6 00
2	New York News Company.....	Subscription New York Herald.....	6 25
2	R. R. Bowker.....	American Catalogue.....	59 00
2	Army and Navy Journal.....	Subscription.....	2 25
2	D. Van Nostrand.....	Books.....	81 71
2	Chas. S. Hart.....	Repairing furniture.....	36 00
2	E. C. E. Johnson.....	Washing towels.....	23 65
2	S. W. Lloyd.....	Carpentry.....	19 50
3	T. Burgess.....	Glazing windows.....	5 00
3	D. Ballauf.....	Repairing gas-engine.....	4 00
3	Public Printer.....	Catalogues of Government Publications.....	30 40
4	Rhodes & Simms.....	Carpentry.....	68 90
4	J. Wm. Jones.....	Southern Historical Society Papers, vol. 13.....	3 50
5	E. P. Cross.....	Livery of horses and shoeing.....	44 00
5	John Bird.....	Removing snow.....	3 60
5	E. W. Woodruff.....	File-holders.....	10 40
5	Chas. D. Morris.....	Removing snow.....	2 00
5	John T. Donn & Son.....	Furniture.....	199 50
6	Washington Gas Company.....	Gas.....	387 35
6	Chas. Haerle.....	Car fare.....	2 16
6	Wm. Ballantyne & Son.....	Postal Guides.....	14 80
6	Stephenson & Bro.....	Fuel.....	801 48
6	James Fitzpatrick.....	Furnace fire-pot.....	13 75
6	Macmillan & Co.....	Book.....	2 71
6	Lucy A. Strother.....	Washing towels.....	3 07
8	Agnes Burton.....	do.....	5 81
8	E. G. Wheeler.....	Chair-seats and cotton waste.....	11 54
8	M. W. Beveridge.....	Filterer, cooler, &c.....	19 53
8	Weed, Parsons & Co.....	Subscription Albany Law Journal.....	5 00
8	Abram Jones.....	Glazing, &c.....	13 35
9	F. A. Conrad.....	Repairing fence.....	2 50
9	Annie L. Datcher.....	Washing towels.....	12 90

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
Feb. 9	Geo. E. Strobel.....	Stoves, repairing roof, &c.....	\$147 38
9	James J. Chapman.....	Almanacs.....	2 80
9	Petersen & Childs.....	Shades, rugs, &c.....	20 70
9	New York News Company.....	Subscription London News and Graphic.....	9 00
9	D. Van Nostrand.....	Subscription Engineering Magazine.....	2 92
9	Egbert T. Sees, treasurer.....	Subscription Travelers' Official Guide.....	2 34
9	T. H. S. Hamersly.....	Subscription United Service.....	4 00
10	Henry Robinson.....	Storing coal.....	2 72
10	Wm. W. Farr.....	Repairing clock.....	3 00
10	J. Karr.....	do.....	3 50
11	Thos. Jackson.....	Storing fuel.....	10 60
11	D. B. Canfield & Co.....	Subscription American Law Register.....	5 00
12	James B. Lambie.....	Hardware.....	49 02
12	Theodore Rue.....	Nickel plates.....	4 20
12	Alex'r Anderson.....	Storing coal.....	1 05
12	Munn & Co.....	Subscription Scientific American, &c.....	4 10
12	F. A. Schneider.....	Hardware.....	30 85
13	Easton & Rupp.....	Books.....	22 50
13	Army and Navy Journal.....	Subscriptions.....	17 50
13	J. S. Topham.....	Mail bag, repairing harness, &c.....	50 75
13	Lawrence, Wilde & Co.....	Leather.....	13 50
13	T. J. Edwards.....	Plumbing, &c.....	154 00
16	Mutual District Messenger Company.....	Rent of instruments.....	10 15
16	William H. Stevenson.....	Subscription Central Law Journal.....	5 00
16	W. B. Moses & Son.....	Screen and chair.....	16 00
16	J. Loring Whittington.....	Official Railroad Guide.....	13 50
16	M. J. Wine.....	File case.....	12 00
16	E. F. Brooks.....	Gas fitting.....	10 57
16	John McDermott & Bro.....	Coach candles.....	11 50
16	Chicago Legal News Company.....	Subscription.....	2 20
17	Baltimore and Ohio Telegraph Company.....	Telegrams.....	5 59
17	George Ryneal, jr.....	Oil, brushes, &c.....	8 71
17	do.....	Oil, turpentine, &c.....	25 31
18	Z. D. Gilman.....	Putty.....	70
18	do.....	Oil and glass.....	7 25
18	Western Union Telegraph Company.....	Telegrams.....	21 59
18	R. K. Helphenstine.....	Alcohol.....	2 50
18	C. A. Schneider's Sons.....	Bearing-bars, &c.....	6 46
18	E. Morrison.....	Printers' ink, varnish, &c.....	17 70
19	E. & F. N. Spon.....	Subscription Iron Age and Franklin Institute Journal.....	3 73
19	Hayward & Hutchinson.....	Andirons.....	2 50
19	W. H. Rapley.....	Repairing washstand.....	3 50
19	E. G. Wheeler.....	Rubber coat and horse blanket.....	7 50
19	W. B. Moses & Son.....	Revolving chairs.....	13 00
20	Murray & Barker.....	Shoeing horses.....	30 38
20	H. L. Pelouze & Son.....	Type, &c.....	14 60
20	J. H. Soule & Co.....	Subscription Military List.....	6 00
20	James Fitzpatrick.....	Grate setting, &c., and repairing chimney.....	49 00
20	J. W. Boteler & Son.....	Matches.....	1 34
23	Thomas Somerville & Sons.....	Steam fittings.....	10 45
23	Adams Express Company.....	Freightage.....	27 95
23	The MacKellar, Smiths & Jordan Company.....	Printing material.....	294 17
23	Engineering News Publishing Company.....	Subscription.....	2 12
23	George A. Shehan.....	Lumber.....	19 76
24	Western Union Telegraph Company.....	Telegrams.....	46 97
25	Baltimore and Ohio Telegraph Company.....	do.....	3 82
25	Ferdinand Martin.....	Repairing furniture.....	1 75
25	John T. Donn & Son.....	Furniture.....	280 50
26	Charles Warner.....	Storing coal.....	3 75
27	Samuel G. Eberly.....	Car tickets.....	11 85
27	Alexander Anderson.....	Storing coal.....	1 50
27	D. W. Beveridge & Co.....	Wire fender.....	8 50
27	W. R. McLean.....	Lumber.....	39 00
27	T. J. Edwards.....	Plumbing.....	46 38
27	Elizabeth Denham.....	Washing towels.....	6 45
27	Susannah Baker.....	do.....	53 70
Mar. 1	E. C. E. Johnson.....	do.....	25 55
1	Lucy A. Strother.....	do.....	2 58
1	The Burr Index Company.....	Indexes.....	47 50
2	Smith & Co.....	Desks.....	540 00
2	Charles S. Hart.....	Carpentry.....	48 00
2	Alexander Anderson.....	Storing coal.....	12 50
2	William W. Farr.....	Clock.....	7 10
3	John F. Paret.....	Books.....	31 00
3	W. H. Morrison.....	do.....	8 00
3	E. P. Cross.....	Livery of horses.....	40 00

CONTINGENT FUND, WAR DEPARTMENT.

Contingent expenses, War Department, 1886.—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
Mar. 4	Charles Haerle	Car fare	\$2 10
4	Katharine Schaefer, administratrix	Paste	9 00
4	William H. Boyd	City Directory	5 00
4	John M. Judd	Spofford's Almanacs	3 00
4	William Ballentyne & Son	Books	92 52
5	James B. Lambie	Hardware	20 08
5	E. W. Woodruff	File cases and holders	173 80
5	J. S. Topham	Robes, &c	60 00
5	F. A. Schneider	Hardware	16 83
5	Annie L. Datcher	Washing towels	12 00
5	Agnes Burton	do	6 15
5	Washington Gas Company	Gas	377 60
5	Stephenson & Bro	Coal and wood	627 75
6	Charles S. Hart	Carpentry	15 00
6	John M. Judd	Books	5 80
6	J. E. Smith	Grant's Memoirs	3 50
6	William W. Farr	Clock	8 50
6	W. H. Rapley	Iron screen, water-cooler, &c	14 00
8	M. W. Beveridge	Filters, baskets, &c	36 94
8	Washington and Georgetown Railroad Company	Car tickets	40 00
8	W. H. Morrison	Books	41 00
9	C. F. Little	Door-holders	30 00
9	James J. Chapman	Dictionary and almanac	11 70
9	D. Van Nostrand	Subscription to American Journal of Science and Art	4 00
9	Franklin Institute	Subscription to Journal	3 33
10	Royce & Marean	Repairing electric-bell batteries	3 60
10	T. H. S. Hamersly	Subscription to United Service	2 00
10	Petersen & Childs	Corticine and shades	40 55
11	The Publisher of Science	Subscription to Science	6 00
11	Munn & Co	Subscription to Scientific American and supplement	4 10
11	Adams Express Company	Freightage	26 25
11	Murray & Baker	Shoeing horses	21 25
11	E. W. Woodruff	File-holders and case	156 00
11	MacKellar, Smiths & Jordan Company	Printing materials	74 83
11	John McDermott & Bro	Repairing mail wagons	32 35
12	Alex Anderson	Storing coal	3 65
12	Charles Hall	Whitewashing	60 00
13	D. W. Beveridge & Co	Wire screen	12 00
13	The Army and Navy Journal	Subscription	3 75
13	F. W. Stone	Distributing Surgeon-General's Office publications	6 23
15	W. B. Moses & Son	Gimp	2 67
16	Alex Anderson	Storing coal	1 75
16	R. K. Helphenstine	Alcohol, ammonia, and borax	3 50
16	A. W. Hodgkins	Maps	63 00
16	John T. Donn & Son	Table-desk, book-case, &c	214 75
16	The New York News Company	Subscription to magazines	53 87
16	George Ryneal, jr	Wax, lard oil, and globes	4 93
16	Baltimore and Ohio Express	Freight	75
17	Baltimore and Ohio Telegraph Company	Telegrams	1 25
17	Brentano Bros	Subscription to Boston Daily Advertiser	3 75
17	Mutual District Messenger Company	Rent of instruments	10 00
17	F. A. Schneider	Weather strips, bolts, and washers	1 76
18	George E. Strobel	Repairing furnace, roof, &c	180 51
19	E. Morrison	Binders' material	38 30
20	J. Christian	Storing fuel	4 50
20	Alfred Brown	do	50
20	J. S. Topham	File-straps, &c	67 50
20	T. J. Edwards	Plumbing	16 65
20	Roginski & Lewis	Glazing	1 25
23	Joseph Von Glüemer	Maps	18 00
24	Charles S. Hart	Carpentry	12 50
24	James Truman	Storing fuel	3 00
24	Horton & Leland	Painting roof	32 58
24	Baltimore and Ohio Telegraph Company	Telegrams	66
24	John T. Paret	Dictionary stand	5 00
26	George A. Shehan	Lumber	31 19
26	J. M. Foster	Storing Fuel	1 25
27	Z. D. Gilman	Hard oil finish	1 40
27	James Fitzpatrick	Repairing flues and mantels	17 50
27	F. Bubb & E. A. Galier	Mop wringers	3 00
31	James B. Lambie	Hardware	32 76
31	R. K. Helphenstine	Toilet soap	11 25
31	O. H. P. Clark	Livery of horses	28 00
31	T. J. Edwards	Plumbing	74 40

CONTINGENT FUND, WAR DEPARTMENT.

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Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
Mar. 31	The New York News Company.....	Subscription to magazines.....	\$36 84
31	Chesapeake and Potomac Telephone Co.	Rent of instruments, &c.....	291 00
31	George Ryneal, jr.....	Oils, paints, &c.....	9 70
31	Samuel G. Eberly.....	Car tickets.....	41 60
31	E. P. Cross.....	Livery of horses.....	40 00
31	Petersen & Childs.....	Shades and desk cloth.....	77 25
31	E. C. E. Johnson.....	Washing towels.....	34 72
31	Annie L. Datcher.....	do.....	12 65
31	Susannah Baker.....	do.....	67 02
31	Mary A. Loveless.....	do.....	21 22
31	Lucy A. Strother.....	do.....	2 68
31	Elizabeth Denham.....	do.....	6 30
31	Mary Gannon.....	do.....	78 93
31	Phillippina Ganz.....	do.....	18 00
31	F. A. Schneider.....	Hardware.....	31 57
31	Abram Jones.....	Glazing.....	7 05
31	R. K. Helphenstine.....	Soap.....	37 50
31	Z. D. Gilman.....	Glass, &c.....	26 42
31	Farrow's Military Encyclopedia.....	Books, 3 volumes.....	50 00
31	A. P. McElroy.....	Picture frames.....	25 30
31	W. E. Abbott.....	Tub.....	90
31	George A. Shehan.....	Lumber.....	41 45
31	J. S. Topham.....	Repairing harness, &c.....	71 65
31	Washington Gas Company.....	Gas.....	372 05
April 1	Thomas Holt.....	Storing fuel.....	50
5	Charles H. Hipkins.....	do.....	50
6	do.....	do.....	1 75
6	Charles S. Hart.....	Carpentry.....	14 00
6	Caroline Jones.....	Washing towels.....	6 50
8	Alexander Anderson.....	Storing fuel.....	2 25
9	W. S. Hoge & Bro.....	Horsefeed.....	41 46
9	Stephenson & Bro.....	Fuel.....	482 30
9	Henry Trine.....	Repairing furniture.....	69 00
9	Rhodes & Simms.....	Carpentry.....	12 15
9	Hayward & Hutchinson.....	Repairing grate, &c.....	3 65
9	E. G. Wheeler.....	Cotton waste.....	47
9	City Post Office.....	Rent of post-office box.....	2 00
9	Charles Haerle.....	Car fare.....	2 34
10	William W. Farr.....	Winding, &c., clocks.....	80 00
10	T. J. Edwards.....	Plumbing.....	28 00
10	John T. Donn & Son.....	Repairing chairs.....	70
10	William Ballantyne & Son.....	Postal guides, &c.....	32 75
10	Macmillan & Co.....	Dictionary, vol. 6.....	2 44
10	E. W. Woodruff.....	File-holders.....	84 00
10	John McDermott & Bro.....	Repairing mail wagon.....	25 25
14	Charles S. Hart.....	Carpentry.....	3 00
14	W. D. Wyvill.....	Polishing stoves.....	1 50
14	Ira Godfrey.....	Washing towels.....	7 01
14	Agnes Burton.....	do.....	1 12
14	Burton Rudd.....	Storing fuel.....	2 50
14	New York News Company.....	Subscription Official Railway Guide.....	1 50
14	S. J. Haislett.....	Repairing awnings.....	216 00
14	Robert Williams.....	Storing fuel.....	25
14	Patrick Fitzgerald.....	Removing snow.....	5 80
15	James H. Byram.....	Carpentry.....	86 15
15	George E. Strobel.....	Repairing roof and flues.....	127 50
16	do.....	Repairing and setting stoves, &c.....	52 95
16	John E. Poor.....	Removing ashes.....	6 00
16	Baltimore and Ohio Telegraph Company	Telegrams.....	2 44
16	H. L. Pelouze & Son.....	Printers' materials.....	7 50
16	John T. Donn & Son.....	Furniture.....	121 00
16	William W. Farr.....	Clock, &c.....	17 00
16	Adams Express Company.....	Expressage.....	23 00
16	James Fitzpatrick.....	Grate, fender, &c.....	36 00
16	Harris & Schaefer.....	Repairing clocks.....	11 00
16	R. M. Pulsifer & Co.....	Subscription Boston Herald.....	2 35
16	Great Falls Ice Company.....	Ice.....	451 61
16	James J. Chapman.....	Cyclopedia, vol. 3.....	12 00
17	do.....	Book.....	3 00
17	A. C. & G. H. Demonet.....	Candles.....	9 00
17	J. W. Boteler & Son.....	Large ewers.....	5 35
17	J. F. Manning & Co.....	Grate, &c.....	45 00
17	Murray & Barker.....	Shoeing horses.....	18 38
19	do.....	do.....	22 75
19	Katharine Schaefer, administratrix.....	Paste.....	4 75
19	M. W. Beveridge.....	Coal-hod, lamp-shade, &c.....	7 05
19	W. H. Morrison.....	Law books.....	12 50
20	C. Schneider.....	Repairing locks.....	50
20	W. D. Wyvill.....	Cleaning furnace pipes.....	2 00
20	George Henry Aschenbach.....	Sharpening shears.....	75

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
Apr. 22	E. Morrison.....	Press-boards, &c.....	\$16 56
22	Baltimore and Ohio Telegraph Company	Telegrams.....	2 53
22	Herbert W. Beecher, manager.....	Encyclopedia (set).....	50 00
22	C. D. Collins.....	Altering drawing table.....	10 00
22	James E. Parker.....	Storing fuel.....	2 00
23	John Brady.....	Cleaning premises.....	30 00
24	Arthur W. Hodgkiss.....	Map.....	5 00
24	Zack White.....	Storing fuel.....	3 00
24	T. J. Edwards.....	Plumbing.....	251 98
24	Thomas McGuire.....	Removing ashes.....	42 75
26	Baltimore and Ohio Telegraph Company	Telegrams.....	5 25
26	Washington Gas Company.....	Gas.....	90
28	James A. Wortham.....	Moving Brady negatives.....	3 00
30	Annie L. Datcher.....	Washing towels.....	10 48
30	Susannah Baker.....	do.....	54 82
30	Elizabeth Denham.....	do.....	7 05
30	Lucy A. Strother.....	do.....	2 65
30	Carrie Jones.....	do.....	5 67
30	Benjamin Taylor.....	Whitewashing.....	7 00
30	John T. Donn & Son.....	Furniture, &c.....	225 75
30	Mutual District Messenger Company..	Rent of instruments.....	10 25
30	T. J. Edwards.....	Plumbing.....	46 30
30	Charles S. Hart.....	Carpentry.....	6 00
30	Henry Trine.....	do.....	48 00
May 1	Alexander Anderson.....	Storing fuel.....	7 75
1	Annie Redden.....	Washing windows, &c.....	15 50
3	A. P. McElroy.....	Frame and mat.....	6 50
4	Charles Haerle.....	Car fare.....	2 19
4	Alexander Anderson.....	Storing fuel.....	1 75
4	John Collins.....	Spring catches, &c.....	1 85
4	Ferdinand Martin.....	Repairing furniture.....	2 00
5	The Burr Index Company.....	Indexes.....	120 00
5	E. C. E. Johnson.....	Washing towels, &c.....	33 00
5	W. H. Hoeke.....	Screen.....	10 00
5	Charles S. Hart.....	Sash cord.....	2 00
5	J. W. Bouton, Agent.....	Book.....	7 50
5	Stephenson & Bro.....	Fuel.....	461 13
5	Samuel G. Eberly.....	Car tickets.....	46 73
6	Katharine Schaefer, administratrix..	Paste.....	4 75
6	E. P. Cross.....	Livery and horses.....	40 00
6	M. W. Beveridge.....	Filters, buckets, &c.....	35 25
6	John A. Baker.....	Repairing letter scale.....	2 50
6	S. J. Haislett.....	Repairing, &c., awning.....	37 00
6	K. Kittridge.....	Magazines.....	2 66
7	Luttrell & Wine.....	Linen, cotton, and braid.....	27 86
7	W. H. Rapley.....	Stove and fixtures.....	47 85
7	R. K. Helphenstine.....	Combs, alcohol, &c.....	8 55
8	Z. D. Gilman.....	Brushes and camphor.....	64 73
8	Abram Jones.....	Painting, &c.....	79 00
8	John McDermott & Bro.....	Repairing mail wagon.....	13 25
8	Edward Ambler.....	Whitewashing.....	60 00
8	A. C. & G. H. Demonet.....	Salt.....	40
10	George E. Strobel.....	Repairing roofs, &c.....	86 90
10	John S. Snedeker & Co.....	Cylinder oil.....	27 50
11	Washington Gas Company.....	Gas.....	365 60
11	William W. Farr.....	Repairing clock.....	1 50
11	Baltimore and Ohio Express.....	Freightage.....	1 05
11	F. A. Schneider.....	Hardware.....	86 70
11	J. Loring Whittington.....	Railroad Guides and Encyclopedia Britannica.....	19 00
11	Pettit & Dripps.....	Boiler, &c.....	42 48
13	Murray & Barker.....	Horseshoeing.....	12 00
13	Macmillan & Co.....	Dictionary.....	3 25
14	E. & F. N. Spon.....	Books, &c.....	45 65
14	MacKellar, Smiths & Jordan Company..	Type.....	49 09
14	W. B. Moses & Son.....	Chairs.....	114 00
14	Adams Express Company.....	Freightage.....	22 80
14	Theodore Rue.....	Nickel plates.....	1 40
15	William W. Farr.....	Repairing clock.....	6 50
15	E. Morrison.....	Printing materials.....	8 60
15	James B. Lambie.....	Hardware.....	28 29
15	George Ryneal, jr.....	Paints, oils, &c.....	40 47
15	Alexander Anderson.....	Storing fuel.....	1 05
15	J. S. Topham.....	Harness, &c.....	67 90
17	Petersen & Childs.....	Brackets, &c.....	8 50
17	Mutual District Messenger Company..	Rent of instruments.....	10 15
18	S. J. Haislett.....	Hanging awnings.....	5 92
18	E. F. Brooks.....	Repairing water-distributor.....	1 50
18	R. C. M. Burton.....	Repairing, &c., awnings.....	75 25
18	J. M. Stoddart & Co.....	Grant Memoirs.....	30 50

CONTINGENT FUND, WAR DEPARTMENT.

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Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
May 19	Alex. Sembly.....	Storing fuel.....	\$0 50
19	George A. Sheban.....	Lumber.....	6 93
19	Baltimore & Ohio Telegraph Company.....	Telegrams.....	2 23
20	Thomas G. Hood.....	Soap and mats.....	314 74
20	Burton Rudd.....	Cleaning, &c.....	2 25
21	George W. Lange.....	Carpentry.....	165 10
22	William W. Farr.....	Clock.....	25 00
22	George R. Hall.....	Repairing mail-wagons.....	46 00
22	W. H. Morrison.....	Law books.....	1 50
24	J. W. Boteler & Son.....	Matches.....	1 34
25	William Ballantyne & Son.....	Books and periodicals.....	172 42
25	Pay-roll.....	Labor.....	17 24
26	Royce & Mareau.....	Electrical clock, &c.....	48 85
28	John T. Donn & Son.....	Furniture and repairs.....	187 00
28	George P. Rowell & Co.....	Newspaper Directory, 1886.....	5 00
29	John C. Callahan.....	Painting.....	52 00
29	Edward Ambler.....	Whitewashing.....	20 00
29	T. J. Edwards.....	Cleaning sewer.....	9 91
29	Thomas Somerville & Sons.....	Pipe and fittings.....	2 33
29	M. E. Mann.....	Appleton's Cyclopædia.....	24 00
29	James B. Lambie.....	Hardware.....	105 84
29	Ellen Grant.....	Scrubbing.....	16 50
29	Eugene Curtis.....	Storing coal.....	3 50
June 1	Hanghwoit Howe.....	Foreign expressage.....	5 75
1	Annie L. Datcher.....	Washing towels.....	10 35
1	Susannah Baker.....	do.....	54 20
1	Elizabeth Denham.....	do.....	6 60
1	Lucy A. Strother.....	do.....	3 35
1	E. C. E. Johnson.....	do.....	27 45
2	S. J. Haislett.....	Awnings, &c.....	109 11
2	R. Goldschmid.....	Buckets.....	10 74
3	Western Union Telegraph Company.....	Telegrams.....	1 23
3	Wilmarth & Edmonston.....	Tile.....	50
3	James Gopsill's Sons.....	Philadelphia Directory.....	5 00
3	E. Waldecker.....	Advertising proposal for stationery.....	5 75
3	The Republican Company.....	do.....	4 80
4	The Evening Post.....	do.....	18 00
4	The North American.....	do.....	16 20
4	The Army and Navy Journal.....	do.....	9 00
4	John McDermott & Bro.....	Repairing truck.....	8 50
4	E. W. Woodruff.....	File-holders, &c.....	165 69
5	Stephenson & Bro.....	Fuel.....	166 08
5	E. F. Brooks.....	Rubber gaskets.....	50
5	Burton Rudd.....	Storing coal.....	1 75
5	Eugene Curtis.....	Taking up carpets.....	1 41
5	Philip Smith.....	do.....	1 41
5	John W. Johnson.....	do.....	1 41
5	Post Publishing Company.....	Advertising proposal for stationery.....	9 00
7	Washington Gas Company.....	Gas.....	300 80
7	M. G. Copeland & Co.....	Awnings.....	88 15
7	James H. Byram.....	Repairing roof.....	20 00
7	W. H. Lowdermilk & Co.....	Books.....	19 00
7	E. P. Cross.....	Livery of horses.....	40 00
8	J. W. Boteler & Son.....	Water-cooler, bucket, broom, &c.....	29 32
8	Rowland A. Robbins.....	Feather dusters.....	133 80
8	John T. Donn & Son.....	Desk top.....	95 00
9	Wilmarth & Edmonston.....	China filter.....	18 50
9	W. B. Moses & Son.....	Matting.....	30 60
9	W. J. Hooper.....	Advertising proposal for stationery.....	8 93
10	Carrie Jones.....	Washing towels, &c.....	6 35
10	Lysander Cooper.....	Whitewashing, &c.....	50 00
10	Pay-roll.....	Cleaning carpets.....	31 50
11	R. K. Helphenstine.....	Alcohol, ammonia, &c.....	14 25
11	Petersen & Childs.....	Matting, &c.....	871 48
11	William Ballantyne & Son.....	Books and periodicals.....	319 27
11	R. M. Pulsifer & Co.....	Advertising proposal for stationery.....	9 75
11	Army and Navy Journal.....	Advertising proposal for miscellaneous supplies.....	5 25
11	E. Waldecker.....	Advertising.....	6 00
12	Pay-roll.....	Cleaning carpets.....	57 09
12	W. B. Moses & Son.....	Chair.....	18 00
12	John C. Parker.....	Book supports.....	1 20
12	Josephine Elbert.....	Scrubbing.....	12 00
12	Benjamin Taylor.....	Whitewashing.....	8 00
12	F. A. Schneider.....	Hardware.....	28 46
12	Abram Jones.....	Painting, &c.....	303 00
14	George Ryneal, jr.....	Turpentine, oil, &c.....	8 50
14	William H. Boyd.....	Map of Washington.....	2 00
14	J. S. Topham.....	Repairing harness, &c.....	35 50
14	J. Loring Whittington.....	Railroad Guides and Encyclopædia Britannica.....	

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
June 14	Smith & Co.....	Book-case and desk.....	\$200 00
14	North American.....	Advertising proposals for miscellaneous supplies.	17 10
15	William J. Hooper.....	Advertising.....	8 40
15	Chesapeake and Potomac Telephone Company.	Rent of instrument.....	30 00
15	W. H. Hoeke.....	Cleaning carpets.....	42 23
15	Katharine Schaefer, administratrix.....	Paste.....	3 75
15	National Electric Company.....	Repairing electric bells.....	1 60
16	George Henry Aschenbach.....	Sharpening paper-cutter knife.....	2 50
16	T. J. Edwards.....	Plumbing.....	65 00
16	Army and Navy Journal.....	Subscription.....	6 00
16	C. Schneider.....	Pneumatic bell.....	12 00
17	A. C. & G. H. Demonet.....	Salt.....	2 00
17	John T. Donn & Son.....	Furniture.....	394 50
17	Luttrell & Wine.....	Braid and thread.....	2 16
18	do.....	Cotton, silk laces, &c.....	35 44
18	Smith Thompson.....	File-holders.....	10 65
18	George A. Shehan.....	Lumber.....	17 63
18	Abram Jones.....	Painting, &c.....	314 00
18	I. N. Burritt.....	Advertising proposal for fuel.....	8 75
18	do.....	Advertising proposal for ice.....	7 00
18	do.....	Advertising proposal for stationery.....	5 25
18	do.....	Advertising proposal for miscellaneous supplies.	5 25
18	Washington Post.....	Advertising proposal for ice.....	12 50
18	do.....	Advertising proposal for miscellaneous supplies.	9 50
18	do.....	Advertising proposal for stationery.....	9 00
19	The New York Star.....	Advertising.....	19 20
19	do.....	Advertising proposal for miscellaneous supplies.	21 60
19	A. S. Abell & Co.....	Advertising proposal for miscellaneous supplies.	11 40
19	do.....	Advertising proposal for stationery.....	10 80
19	E. Waldecker.....	Advertising proposal for fuel.....	8 50
19	do.....	Advertising proposal for ice.....	7 00
19	Murray & Barker.....	Shoeing horses.....	28 75
19	C. G. Thorn.....	Plumbing.....	22 90
19	Roginski & Lewis.....	Glazing.....	75
22	Pay-roll.....	Cleaning, carpets, &c.....	36 12
22	do.....	Moving negatives.....	4 30
23	Mutual District Messenger Company.....	Rent of instruments.....	10 00
23	National Republican Company.....	Advertising proposal for fuel.....	15 50
23	do.....	Advertising proposal for ice.....	12 50
23	do.....	Advertising proposal for miscellaneous supplies.	10 50
23	do.....	Advertising proposal for stationery.....	9 00
23	Washington Post.....	Advertising proposal for fuel.....	14 00
26	Philadelphia Record.....	Advertising proposal for stationery.....	20 40
26	Julia Tennyson.....	Washing towels.....	10 50
26	M. W. Beveridge.....	Salver, tumblers, &c.....	14 38
26	Pay-roll.....	Cleaning carpets.....	9 00
28	A. P. McElroy.....	Frames, mats, &c.....	14 00
28	John E. Poor.....	Cleaning yard.....	84
28	Pay-roll.....	Cleaning carpets.....	67 79
28	do.....	do.....	17 48
28	do.....	do.....	3 59
30	do.....	do.....	13 50
30	Army and Navy Register.....	Advertising proposal for stationery.....	5 13
30	do.....	Advertising proposal for ice.....	6 60
30	do.....	Advertising proposal for fuel.....	8 06
30	do.....	Advertising proposal for miscellaneous supplies.	5 50
30	James J. Chapman.....	Dictionaries.....	19 00
30	James Pemberton.....	Moving negatives.....	8 34
30	F. W. Stone.....	Distributing Surgeon-General's Office publications.	27 35
30	J. S. Topham.....	Blankets, robes, &c.....	92 51
30	Adams Express Company.....	Freightage.....	21 20
30	Samuel G. Eberly.....	Car-tickets.....	98 75
30	F. A. Beuchler.....	Repairing harness.....	13 00
30	William H. West & Bro.....	Bricks.....	1 00
30	Susannah Baker.....	Washing towels.....	57 55
30	Rebecca Davenport.....	do.....	10 20
30	Elizabeth Denham.....	do.....	6 50
30	Lucy A. Strother.....	do.....	2 52
30	Mary Gannon.....	do.....	88 90
30	E. C. E. Johnson.....	do.....	27 60

Contingent expenses, War Department, 1886—Continued.

Date.	To whom paid.	On what account.	Amount.
1886.			
June 30	Mary A. Loveless.....	Washing towels.....	\$21 30
30	Phillippina Ganz.....	do.....	18 00
30	Washington Gas Company.....	Gas.....	244 40
30	William W. Farr.....	Regulating clock, &c.....	73 00
30	Stephenson & Bro.....	Coal.....	29 95
30	John McDermott & Bro.....	Repairing mail-wagon.....	58 85
30	Chesapeake & Potomac Telephone Company.	Rent of instruments.....	288 50
30	E. P. Cross.....	Livery of horses.....	40 00
30	James B. Lambie.....	Hardware.....	41 87
30	T. J. Edwards.....	Plumbing.....	69 70
30	John F. Paret.....	Dictionary.....	9 50
30	Charles B. Fuse.....	Papering room.....	6 00
30	George Ryneal, jr.....	Paints, oils, &c.....	22 22
30	Adams Express Company.....	Freightage.....	50 40
30	William Ballantyne & Son.....	Books.....	86 59
30	James H. Byram.....	Carpentry.....	58 00
30	Z. D. Gilman.....	Soap, &c.....	56 02
30	Stevens, Lawrence & Co.....	Safe.....	57 00
30	Murray & Barker.....	Shoeing horses.....	37 00
30	Baltimore and Ohio Express.....	Freightage.....	2 90
30	H. L. Cranford.....	Repairing asphaltum floor.....	5 88
30	Annie L. Datcher.....	Washing towels.....	12 93
30	E. G. Wheeler.....	Cotton waste.....	4 63
30	F. M. Draney.....	Removing soil.....	3 00
30	Carrie Jones.....	Washing towels, &c.....	8 09
30	John McDermott & Bro.....	Repairing mail-wagons.....	95 00
30	Abram Jones.....	Staining and glazing.....	14 50
30	Evening Star Newspaper Company.....	Advertising proposal for fuel.....	16 20
30	do.....	Advertising proposal for ice.....	13 20
30	do.....	Advertising proposal for miscellaneous supplies.	11 40
30	do.....	Advertising proposal for stationery.....	10 20
30	T. J. Edwards.....	Plumbing.....	36 10
	Total.....		54,421 74

Amount appropriated, act of March 3, 1885..... \$61,500 00

Amount expended..... 54,421 74

Balance..... 7,078 26

Date	Description	Amount	Total
1890			
Jan 1	Balance	100.00	100.00
Jan 15	Interest	5.00	105.00
Feb 1	Interest	5.00	110.00
Feb 15	Interest	5.00	115.00
Mar 1	Interest	5.00	120.00
Mar 15	Interest	5.00	125.00
Apr 1	Interest	5.00	130.00
Apr 15	Interest	5.00	135.00
May 1	Interest	5.00	140.00
May 15	Interest	5.00	145.00
Jun 1	Interest	5.00	150.00
Jun 15	Interest	5.00	155.00
Jul 1	Interest	5.00	160.00
Jul 15	Interest	5.00	165.00
Aug 1	Interest	5.00	170.00
Aug 15	Interest	5.00	175.00
Sep 1	Interest	5.00	180.00
Sep 15	Interest	5.00	185.00
Oct 1	Interest	5.00	190.00
Oct 15	Interest	5.00	195.00
Nov 1	Interest	5.00	200.00
Nov 15	Interest	5.00	205.00
Dec 1	Interest	5.00	210.00
Dec 15	Interest	5.00	215.00
1891			
Jan 1	Balance	215.00	215.00
Jan 15	Interest	5.00	220.00
Feb 1	Interest	5.00	225.00
Feb 15	Interest	5.00	230.00
Mar 1	Interest	5.00	235.00
Mar 15	Interest	5.00	240.00
Apr 1	Interest	5.00	245.00
Apr 15	Interest	5.00	250.00
May 1	Interest	5.00	255.00
May 15	Interest	5.00	260.00
Jun 1	Interest	5.00	265.00
Jun 15	Interest	5.00	270.00
Jul 1	Interest	5.00	275.00
Jul 15	Interest	5.00	280.00
Aug 1	Interest	5.00	285.00
Aug 15	Interest	5.00	290.00
Sep 1	Interest	5.00	295.00
Sep 15	Interest	5.00	300.00
Oct 1	Interest	5.00	305.00
Oct 15	Interest	5.00	310.00
Nov 1	Interest	5.00	315.00
Nov 15	Interest	5.00	320.00
Dec 1	Interest	5.00	325.00
Dec 15	Interest	5.00	330.00

CONTINGENT FUND, MILITARY ESTABLISHMENT.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A statement of expenditures from the contingent fund of the Military Establishment for the fiscal year ended June 30, 1886.

DECEMBER 14, 1886. — Referred to the Committee on Expenditures in the War Department and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 13, 1886.

The Secretary of War has the honor to transmit to Congress a statement of the expenditures from the appropriation for the contingent expenses of the Military Establishment for the fiscal year ending June 30, 1886, as required by section 229 of the Revised Statutes.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Statement of expenditure of moneys appropriated for the contingent expenses of the Military Establishment during the fiscal year ended June 30, 1886.

CONTINGENT FUND, MILITARY ESTABLISHMENT.

Date.	By whom paid.	To whom paid.	On what account.	Amount.	Total.
1885. Sept. 7	George P. Dandy, quartermaster.....	The Vandalia line.....	<i>Contingencies of the Army, 1883.</i> Transportation of an old soldier to Washington, D. C. Transportation of certain Indians under charge of Capt. Frank D. Baldwin, United States Army, en route to Washington, D. C. do..... do..... do..... do..... do..... do.....	\$21 00	\$652 39
7	Amos S. Kimball, assistant quartermaster.	Oregon Railway and Navigation Company..		11 75	
7	do.....	Northern Pacific Railway Company.....		124 94	
7	A. G. Robinson, quartermaster.....	J. H. McFarland.....		55 00	
7	do.....	Missoula and Pend d'Oreille Stage Company.....		30 00	
7	do.....	do.....		5 00	
7	do.....	Gilmer & Salisbury Stage Company.....		84 00	
7	Danied D. Wheeler, assistant quartermaster.	Northern Pacific Railway Company.....		320 70	
			<i>Contingencies of the Army, 1884.</i>		
7	R. N. Batchelder, Deputy Quartermaster-General.	Baltimore and Ohio Railroad Company.....	Transportation of certain Indians returning from Washington, D. C., to Spokane Falls, Wash.	209 10	376 60
7	W. B. Hughes, quartermaster.....	Pennsylvania Railroad Company.....	Transportation of an old soldier to Washington, D. C.	17 50	
Dec. 10	Amos S. Kimball, assistant quartermaster.	Glover & Gilliam.....	Transportation of certain Indians returning from Washington, D. C., to Spokane Falls, Wash.	45 00	
10	do.....	Northern Pacific Railway Company.....	do.....	105 00	
			NOTE.—The foregoing disbursements were made during the fiscal years 1883 and 1884 from appropriations of the Quartermaster's Department which were reimbursed from "Contingencies of the Army" by transfer settlements made in Second Auditor's Office, September 7 and December 10, 1885.		
July 8	Treasury Department.....	George P. Strong, attorney at law.....	<i>Contingencies of the Army, 1885.</i> Professional services from January, 1868, to January, 1885, in re William G. Clark v. United States, before the circuit court, court of appeals, and supreme court of Missouri, and Supreme Court of the United States. Book for War Department law library. Books for headquarters Military Division of the Missouri Army marksmanship medals..... Expressage..... Transportation of insane soldier and attendant to Washington, D. C. Telegrams..... Transportation of insane soldier and attendant, Vancouver, Wash., to Washington, D. C.	3, 500 00	
14	E. M. Lawton, disbursing clerk.....	M. Carlander.....		6 50	
15	do.....	Jansen, McClurg & Co.....		99 97	
15	do.....	United States Mint.....		1, 664 74	
21	do.....	Adams Express Company.....		5 80	
24	do.....	Baltimore and Ohio Railroad Company.....		10 00	
24	do.....	Baltimore and Ohio Telegraph Company.....		5 03	
Aug. 3	do.....	Oregon Railway and Navigation Company..		23 50	

3	do.....	Pullman Palace Car Company.....	34 00
7	do.....	Baltimore and Ohio Telegraph Company.....	28 87
7	do.....	Western Union Telegraph Company.....	264 65
8	do.....	do.....	12 31
28	do.....	do.....	3 11
1886.			
Jan. 16	do.....	George M. Wheeler, captain, Engineers.....	12 01
25	do.....	R. H. Patterson, lieutenant, United States Army.....	8 90
Feb. 19	do.....	Western Union Telegraph Company.....	3 97
Feb. 19	do.....	James D. & E. S. Dana.....	3 00
Mar. 31	do.....	J. L. Whittington.....	60
Apr. 26	do.....	J. H. Hickcox.....	1 00
			5,687 96
1885.		<i>Contingencies of the Army, 1886.</i>	
July 7	do.....	Engineering Magazine for War Department library.....	5 00
8	do.....	Illustrated Naval and Military Magazine for War Department library.....	9 00
9	do.....	Army and Navy Journal for War Department library.....	6 00
18	do.....	Book for War Department library.....	5 00
18	do.....	Books for War Department library.....	16 50
22	do.....	Traveling expenses, Washington, D. C., to Newport, R. I., and return.....	35 10
25	do.....	Volume 19, Encyclopedia Britannica, for War Department library.....	10 00
31	do.....	Traveling expenses under orders of the Secretary of War.....	70 72
31	do.....	do.....	33 25
Aug. 4	do.....	Books for War Department library.....	2 75
4	do.....	Law reports for War Department library.....	3 00
4	do.....	Books for War Department library.....	91 45
7	do.....	Magazine of American History for War Department library.....	5 00
11	do.....	Magazine for War Department library.....	5 00
15	do.....	Book for War Department library.....	4 92
20	do.....	Engraving plates and printing warrants.....	752 07
28	do.....	Telegrams.....	2 52
28	do.....	do.....	3 86
31	do.....	Engraving.....	4 68
31	do.....	Subscription to Blackwood's Magazine for War Department library.....	3 00
Sept. 3	do.....	Engraving Army Department medals.....	3 15
4	do.....	Reimbursement for engraving Army Department medal.....	2 75
4	do.....	Hack-fare for conveying soldier from railroad depot to Government Insane Hospital.....	2 50
5	do.....	Books for War Department library.....	11 50
5	do.....	One copy "Marching through Georgia," for War Department library.....	2 00

Statement of expenditures of moneys appropriated for the contingent expenses of the Military Establishment, &c.—Continued.

Date.	By whom paid.	To whom paid.	On what account.	Amount.	Total.
<i>Contingencies of the Army, 1886—Continued.</i>					
1885.					
Sept. 10	E. M. Lawton, disbursing clerk	A. Feldenheimer	Engraving Army Department medals	\$6 50	
14	do	Thomas J. Day	Engraving medals	32 00	
14	do	Military Service Institution	Books	100 00	
14	do	Bell & Bros	Engraving marksmanship medals	4 72	
15	do	Catherine Odium	Book for War Department library	1 00	
19	do	Baltimore and Ohio Telegraph Company	Telegrams	33 02	
23	do	do	do	28 05	
28	do	Haughtwout Howe, United States dispatch agent.	Compensation for third quarter, 1885 (United States dispatch agent).	50 00	
28	do	Francis Klett	Services necessary for completion of geographical survey publications at Bar Harbor, Maine.	180 00	
28	do	do	do	100 00	
30	do	W. Bushell	Book for War Department library	1 25	
30	do	Francis T. Bowles, corresponding secretary	Subscription to United States Naval Institute Journal	300 00	
30	do	George S. Ewars, agent	Printing and furnishing postal cards	3 50	
30	do	Chesapeake and Potomac Telephone Company.	Rent of instrument	16 75	
30	do	Western Union Telegraph Company	Telegrams	167 10	
30	do	do	do	160 24	
30	do	James J. Chapman	Books for War Department library	51 75	
Oct. 19	do	Maj. William Arthur, paymaster, United States Army.	Reimbursement for stenographic services of W. A. E. Cochran in connection with the funeral obsequies of General Grant.	195 00	
22	do	Herbert W. Beecher	Farrow's Military Encyclopedia for War Department library.	12 00	
23	do	Western Union Telegraph Company	Telegrams	176 99	
26	do	Baltimore and Ohio Telegraph Company	do	30 45	
31	do	E. A. Brown	Engraving marksmanship medals	30 38	
31	do	Little, Brown & Co	Book for War Department library	396 50	
Nov. 4	do	T. H. S. Hamersly	Subscription to "United Service," for War Department library.	4 00	
4	do	William Cushing	Book for War Department library	5 29	
4	do	James J. Chapman	do	29 05	
6	do	Charles S. Sweet	Traveling expenses, Washington, D. C., to Boston, Mass., and return.	61 15	
9	do	George W. Knox	Freightage on books for War Department library	4 70	
12	do	James Anglim & Co	Books for War Department library	13 00	
14	do	The Sherman Publishing Company	do	13 50	
19	do	J. L. Shaw	Encyclopedia for War Department library	7 00	
19	do	James Anglim & Co	Books for War Department library	27 00	
19	do	Cora A. Shauten	Services as translator	35 10	
23	do	J. M. Stoddard & Co	Book for War Department library	5 50	

23	do	Little, Brown & Co	Text-books for office judge-advocate-general, Department of the Missouri.	154 34
27	do	J W. Kirkley	Traveling expenses, Washington, D. C., to Harrisburg, Pa., and return.	14 34
Dec. 2	do	J. E. Smith	"General Grant's Personal Memoirs" for War Department library.	9 00
3	do	T. Alphonse Jackson	Army Registers for War Department library	2 00
8	do	Western Union Telegraph Company	Telegrams	104 18
9	do	James Anglim & Co	Books for War Department library	18 85
10	do	James J. Chapman	do	44 00
10	do	William T. Kent	Traveling expenses	35 75
17	do	John Tweedale	Traveling expenses, Washington, D. C., to Boston, Mass., and return.	43 50
24	do	Baltimore and Ohio Railroad Company	Expressage	50
28	do	James Anglim & Co	Books for War Department library	19 50
30	do	James L. Kervand	Printing and engraving	70 75
31	do	Western Union Telegraph Company	Telegrams	166 08
31	do	Haughwout Howe, United States Dispatch Agent,	Compensation, fourth quarter, 1885	50 00
31	do	Chesapeake and Potomac Telephone Company.	Rent of instrument	15 00
31	do	James J. Chapman	Books for War Department library	11 70
1886.				
Jan. 6	do	James Anglim & Co	do	10 00
7	do	A. K. Williams	do	1 50
11	do	New England Historical Genealogical Society.	do	3 00
13	do	John F. Paret	Magazines for War Department library	19 50
13	do	George M. Wheeler	Rent of office rooms at Bar Harbor, Maine (Geographical Survey).	100 00
13	do	Francis Klett	Services as clerk to Geographical Survey	45 00
16	do	Charles S. Sweet	Expenses from Washington to New York and return	34 40
16	do	Frank M. Kiggins	Books for War Department library	1 00
16	do	George M. Wheeler	Expenses on account Geographical Survey	28 21
23	do	James Beale	Books for War Department library	35
25	do	William T. Kent	Expenses from Washington to Chicago and return	66 50
29	do	J. William Jones	Southern Historical Society Papers for War Department library.	4 00
29	do	R. H. Patterson, lieutenant, United States Army.	On account of transcription of hospital records	2 70
Feb. 1	do	Baltimore and Ohio Telegraph Company	For telegrams	27 51
2	do	Washington and Georgetown Railroad Company.	Street-car tickets for use on official business	10 00
4	do	J. F. Jarvis	Photographs from Brady's war negatives	48 00
4	do	James Anglim & Co	Books for War Department library	3 00
4	do	P. H. Haskell, jr., & Co	Sleigh for use of War Department	90 00
4	do	James J. Chapman	Books for War Department library	66 25
6	do	Baltimore and Ohio Railroad Company	Expressage	50
6	do	J. H. Soule & Co	Subscription to military list for distribution	25 00
9	do	E. L. Hallenbeck	For 95 folios of court records	9 50
10	do	William Ballantyne & Son	Books for War Department library	53 25

Statement of expenditures of money for the contingent expenses of the Military Establishment, &c.—Continued.

CONTINGENT FUND, MILITARY ESTABLISHMENT.

Date.	By whom paid.	To whom paid.	On what account.	Amount.	Total.
1886.			<i>Contingencies of the Army, 1886—Continued.</i>		
Feb. 10	E. M. Lawton, disbursing clerk.	Little, Brown & Co.	Books for War Department library.	\$11 00	
11	do	Herbert W. Beecher	do	12 00	
12	do	Army and Navy Register.	For subscription to 100 copies of Army and Navy Register.	100 00	
12	do	William C. Winslow	Books for War Department library.	10 00	
13	do	V. B. Janin	For translations for Geographical Survey.	40 40	
13	do	James Anglim & Co.	Books for War Department library.	6 00	
13	do	Charles William Schumann.	Engraving marksmanship medals.	25 00	
13	do	Alexander Bartlett, Commissioner of Extra-	Expense in arresting and holding a general-service man,	15 50	
13	do	dition.	United States Army, Windsor, Ontario.		
13	do	H. F. Crosby	Books for War Department library.	30 00	
18	do	Western Union Telegraph Company	Amount paid for telegrams.	142 65	
19	do	James D. & E. S. Dana	Book for War Department library.	6 75	
19	do	Easton & Rupp	Parchment for officers' commissions.	319 01	
23	do	Francis Klett.	Services in preparing report of International Geograph- ical Congress.	75 00	
24	do	Western Union Telegraph Company	Amount paid for telegrams.	111 76	
25	do	Baltimore and Ohio Telegraph Company.	do	25 79	
25	do	Eva McCarthy	Proof-reading of Report of Geographical Survey.	49 50	
Mar. 2	do	John W. Hoffman.	Books for War Department library.	15 00	
3	do	M. W. Galt, Bro. & Co.	Engraving bronze medal.	2 25	
3	do	James Anglim & Co.	Books for War Department library.	8 50	
5	do	Frank M. Lee.	Services preparing Geographical Survey report.	20 00	
8	do	George Cartner.	Books for War Department library.	10 00	
10	do	Francis Klett.	Services as clerk to officers of Geographical Survey.	25 00	
10	do	Thomas H. Sherman.	Books for War Department library.	4 75	
11	do	James J. Chapman	do	31 45	
13	do	Baltimore and Ohio Telegraph Company.	Amount paid for telegrams.	61	
26	do	George M. Wheeler.	Expenses on account of Geographical Survey.	79 27	
26	do	Charles Scribner's Sons	For 3,500 copies of "Blunt's Rifle Firing."	3,333 00	
26	do	W. H. Lowdermilk & Co.	Books for War Department library.	27 75	
27	do	George W. Knox.	Freight on 7 cases of books.	10 45	
27	do	Haughwout Howe, United States dispatch agent.	Expense of importing 50 official maps from Belgium.	3 95	
29	do	Joseph S. Sessford.	Books for War Department library.	10 00	
31	do	J. Loring Whittington.	do	5 91	
31	do	Baltimore and Ohio Telegraph Company.	Amount paid for telegrams.	43 20	
31	do	Houghton, Mifflin & Co.	Books for War Department library.	22 50	
31	do	D. Van Nostrand	do	43	
31	do	Chesapeake and Potomac Telephone Com- pany.	Use of telephone instrument.	15 00	
31	do	Haughwout Howe	Services as United States dispatch agent.	50 00	
31	do	James J. Chapman.	Books for War Department library.	23 00	
Apr. 7	do	J. M. Stoddard & Co.	do	4 00	

17	do	W. H. Lowdermilk & Co	do	25 00
17	do	Little, Brown & Co	do	7 50
20	do	Charles C. Soule	do	6 50
20	do	A. C. Armstrong & Son	do	1 50
22	do	Military Service Institution	For 75 copies of the Hancock monograph	37 50
24	do	Little, Brown & Co	Books for War Department library	31 75
26	do	J. H. Hickcox	do	2 00
28	do	William Ballantyne & Son	do	12 00
30	do	Baltimore and Ohio Telegraph Company	Amount paid for telegrams	15 37
3	do	J. H. Soule & Co	Books for War Department library	1 50
4	do	J. Loring Whittington	do	12 00
6	do	James J. Chapman	do	52 45
6	do	Lieut. W. H. Beehler, United States Navy	do	62 50
7	do	L. P. McCarthy	do	6 00
10	do	William Ballantyne & Son	do	5 00
12	do	J. M. Stoddard & Co	do	9 00
13	do	Baltimore and Ohio Telegraph Company	Telegrams	25 27
14	do	M. E. Mann	Appleton's Annual Encyclopedia, for War Department library	7 00
21	do	D. Van Nostrand	500 copies Ingalls' Ballistics	555 05
24	do	Sergt. Hugh Byrne, First Artillery	Conveying an insane military prisoner from Baltimore and Potomac Railroad station to hospital.	2 50
25	do	Little, Brown & Co	Book for War Department library	6 50
25	do	Henry George & Co	do	3 00
27	do	Little, Brown & Co	do	31 50
28	do	Charles S. Sweet	Traveling expenses from Washington to Fort Leavenworth, Kans., and return.	57 00
29	do	J. Loring Whittington	Stationery for Venice report and Geographical Survey publications.	11 85
1	do	E. S. Miller	Books for War Department library	36 00
3	do	George M. Wheeler	Expenses incurred in preparation of report as United States commissioner to Geographical Congress at Venice.	47 59
3	do	W. H. Lowdermilk & Co	Books for War Department library	20 00
8	do	William T. Kent	Traveling expenses to New York and return	33 65
8	do	James J. Chapman	Book for War Department library	31 30
8	do	Baltimore and Ohio Telegraph Company	Telegrams	26 13
9	do	William Kepler	Book for War Department library	2 66
10	do	Daniel Appleton & Co	300 Cavalry Tactics and 300 Artillery Tactics	798 75
10	do	United States Mint	Army marksmanship medals (24 gold and 38 silver)	1,809 00
15	do	Baltimore and Ohio Telegraph Company	Telegrams	25 21
19	do	Lieut. Adam Slaker, First Artillery	Book for War Department library	1 00
19	do	J. O. Wright & Co	Books for War Department library	250 00
19	do	Baltimore and Ohio Express	Freight	4 20
21	do	Easton & Rupp	Parchment for officers' commissions	159 98
21	do	Little, Brown & Co	Book for War Department library	5 35
22	do	Public Opinion Company	Subscription, second quarter, 1886	63
23	do	Lieut. Col. A. Mordecai	Telegrams connected with obsequies of General Grant	2 76
28	do	Charles S. Sweet	Traveling expenses from Washington to West Point, N. Y., and return.	39 38
28	do	Martin I. Townsend	Professional services in defending enlisted man United States Army.	52 50

Statement of expenditure of moneys appropriated for the contingent expenses of the Military Establishment, &c.—Continued.

CONTINGENT FUND, MILITARY ESTABLISHMENT.

Date.	By whom paid.	To whom paid.	On what account.	Amount.	Total.
1886. June 30	E. M. Lawton, disbursing clerk	Haughwout Howe, United States dispatch agent.	<i>Contingencies of the Army, 1886—Continued.</i> Services for quarter ending June 30, 1886	\$50 00	
30	do	W. H. Lowdermilk & Co		7 50	
30	do	William Ballantyne & Son		37 30	
30	do	J. B. Lippincott & Co		5 00	
	Aggregate			\$13, 941 38	
					20, 658 33

RECAPITULATION.

Contingencies of the Army, 1883.....	\$652 39
Contingencies of the Army, 1884.....	376 60
Contingencies of the Army, 1885.....	5, 687 96
Contingencies of the Army, 1886.....	13, 941 38
	<u>20, 658 33</u>

EXPENDITURES, SPRINGFIELD ARMORY.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A statement of expenditures at the Springfield Armory, and of arms fabricated, altered, and repaired at that armory, during the fiscal year ended June 30, 1886.

DECEMBER 15, 1886.—Referred to the Committee on Expenditures in the War Department and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 13, 1886.

The Secretary of War has the honor to transmit to Congress, in compliance with section 1665, Revised Statutes of the United States, a statement exhibiting the expenditures at the Springfield Armory, and of the arms, components of arms, and appendages fabricated, altered, and repaired at that armory, during the fiscal year ending June 30, 1886.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Statement of expenditures at the National Armory, Springfield, Mass., and of arms, components of arms, and appendages fabricated, altered, and repaired, during the year ended June 30, 1886, in pursuance of section 1665, Revised Statutes.

EXPENDITURES.

Appropriations:

Manufacture of arms at national armories, 1884	\$11,543 46
Manufacture of arms at national armories, 1885	27,810 70
Ordnance service, 1885	237 90
Ordnance, ordnance stores, &c., 1885	195 40
Springfield Arsenal, 1885	293 18
Arming and equipping the militia	46,384 79
Ordnance material (proceeds of sales)	5,512 57
Manufacture of arms at national armories, 1886	395,922 84
Springfield Arsenal, 1886	12,536 13
Ordnance service, 1886	799 10
Ordnance, ordnance stores, &c., 1886	6,639 86
Machines guns, 1886	181 28
Total	508,057 21

EXPENDITURES, SPRINGFIELD ARMORY.

Class.	Arms, components of arms, &c.	No.
6	Experimental 3.2" field gun carriage.....	1
	Feed guides for Gatling guns.....	24
	Hoppers, complete, for Gatling guns.....	12
	Springfield rifles, model 1884.....	32,524
	Springfield rod-bayonet rifles, model 1884.....	1,003
	Springfield carbines, model 1884.....	5,000
	Springfield carbines, experimental, 24-inch barrel.....	1,000
	Field and cavalry officers' sabers.....	154
	Light artillery officers' sabers.....	50
	Officers' swords.....	2
7	Bayonet-scabard bodies, steel.....	10,163
	Chamois-skin saber cases.....	300
	Front-sight covers, carbine.....	1,491
	Front-sight covers, rifle.....	6,382
	Front-sight cover screws.....	417
	Headless-shell extractors, model 1882, complete.....	33,221
	Jointed ramrods, Springfield carbine.....	5,000
	Jointed ramrods, Springfield carbine, experimental.....	1,000
	Pistol grips, metallic.....	4,540
	Pistol-grip screws.....	335
	Screw-drivers, model 1879.....	3,078
	Wooden wiping-rods, carbine.....	9,400
	Wooden wiping-rods, rifle.....	28,250
	<i>Parts of Springfield rifles.</i>	
	Bands, lower.....	629
	Bands, upper, complete.....	25
	Band springs.....	12
	Barrels, sixth milled.....	2
	Bayonets, complete.....	359
	Bayonet-clasps.....	165
	Bayonet-clasp screws.....	415
	Bayonet-clasp stop screws.....	10
	Breech-blocks, complete.....	5
	Breech-block caps.....	260
	Breech-block cap screws.....	1,306
	Breech screws.....	7
	Bridles.....	2,057
	Bridle screws.....	1,569
	Butt-plates.....	3
	Butt-plate screws.....	20
	Cam-latches.....	50
	Cam-latches, complete.....	10
	Cam-latch springs.....	2,451
	Ejector springs.....	3,985
	Ejector-spring spindles.....	3,810
	Ejector studs.....	212
	Extractors.....	3,405
	Firing-pins.....	10,594
	Firing-pin screws.....	2,312
	Front sights.....	1,023
	Front-sight pins.....	527
	Guards, complete.....	10
	Guard-bows, complete.....	200
	Guard-bow swivels.....	77
	Guard-bow swivel-screws.....	185
	Guard screws.....	366
	Hammers.....	133
	Hinge-pins.....	571
	Leaf-slide binding-screws.....	56
	Locks, complete.....	18
	Lock-plates.....	20
	Main-springs.....	1,432
	Main-spring swivels.....	863
	Main-spring swivel-rivets.....	788
	Ramrods.....	225
	Ramrod stops.....	16
	Rear sights, complete.....	234
	Rear-right base springs.....	6
	Rear-sight joint pins.....	470
	Rear-sight leaves, complete.....	150
	Rear-sight screws, front.....	51
	Rear-sight screws, rear.....	51
	Rear-sight slide screws.....	48
	Receivers.....	2
	Sears.....	3,743
	Sear screws.....	2,029
	Sear springs.....	1,983
	Sear-spring screws.....	899
	Side-screws.....	315
	Side-screw washers.....	106
	Stocks, wood part.....	462

Class.	Arms, components of arms, &c.	No.
	<i>Parts of Springfield rifles—Continued.</i>	
10	Stocks, assembled	24
	Stocks, complete	5
	Tang screws	861
	Thumb-pieces	50
	Tips	50
	Tip screws	252
	Triggers	6,339
	Trigger screws	1,602
	Tumblers	4,035
	Tumblers, swiveled	35
	Tumbler screws	1,880
	Windage screws	56
	<i>Parts of Springfield carbine.</i>	
	Butt plates	10
	Cover friction springs	5
	Front sights	200
	Front-sight pins	200
	Stocks, wood part	1,200
	Swivel-bar rings	100
	<i>Parts of Springfield cadet rifle.</i>	
	Guard bow	1
	Ramrods	14
	Stocks, wood part	53
	<i>Parts of Springfield shot-guns.</i>	
	Extractors	173
	Stocks	3
	<i>Parts of Springfield rod-bayonet rifle.</i>	
	Locking springs	6
	Stocks, assembled	30
	<i>Parts of Hotchkiss Navy rifle.</i>	
	Rear sights, complete	62
	Stocks, assembled	112
	Firing-pins, Chaffee-Reece rifle	5
	Stocks, assembled, Springfield carbine, experimental	80
	Scabbard, field and cavalry officer's saber	1
	<i>Miscellaneous articles.</i>	
	Arm-chests, carbine	300
	Arm-chests, rifle	1,002
	Boxes, packing	180
	Boxes, packing, tin	4
	Boxes of cleaning materials	50
	Brush wipers, service shells	100
	Button brushes	18
	Button sticks	50
	Cans, tin	12
	Forgings for bullet-mold gates	150
	Inspecting minors, "Russell"	50
	Sheet-iron cleaning plates	6
	Wire scratch-brushes	25
	Wire caliber-brushes	20
	<i>Tools and utensils for current use.</i>	
	Drop-hammer	1
	Armorsers' augers	433
	Bits, assorted	113
	Brushes, assorted	250
	Chisel	1
	Chisels, cold, hand	24
	Chisel, shaving	1
	Chisels, turning metal	330
	Counterbores	155
	Cutters, assorted	55
	Die	1
	Dies, drop-hammer	281
	Dies, milling, pairs	5

Class.	Arms, components of arms, &c.	No.
	<i>Tools and utensils for current use—Continued.</i>	
10	Dies, punching	4
	Dies, screw-cutting, pairs	45
	Dies, screw-cutting, single	307
	Dies, tilt-hammer	6
	Dies, trimming	9
	Drills, assorted	1, 218
	Files, assorted	1, 301
	Files, rotary	279
	Gauges, assorted	59
	Hammer, hand	1
	Jigs, drilling	5
	Jigs, filing	13
	Machine for stamping	1
	Mandrels, assorted	71
	Mandrels, band	58
	Mills, armorer's	1, 842
	Plugs, caliber	7
	Punches, assorted	7
	Reamers, assorted	287
	Taps, metal screw	122
	<i>Arms cleaned and repaired.</i>	
	Springfield rifles	286
	Hotchkiss rifle	1
	Colt's revolvers	2
	Double-barreled shot-guns	20
	Officers' swords and sabers	9
	Officers' scabbards	3

ARMY SUPPLIES.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

*Reports received by the Quartermaster-General of purchases for the use of
the Army for the fiscal year ended June 30, 1886.*

DECEMBER 15, 1886.—Ordered to be printed and with the accompanying papers referred to the Committee on Expenditures in the War Department.

WAR DEPARTMENT,
Washington City, December 13, 1886.

The Secretary of War has the honor to transmit to Congress, in compliance with the act approved July 5, 1884 (23 Stat., 109), the accompanying reports received by the Quartermaster-General from the several depots, military posts, and stations of the Army, showing the purchases made by the Quartermaster's Department of supplies for the use of the Army during the fiscal year ending June 30, 1886.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.



THE SECRETARY OF WAR
WASHINGTON, D. C.

4107

1917

THE SECRETARY OF WAR

WASHINGTON, D. C.

Approved by the President of the United States
the 10th day of July 1917

Approved by the Secretary of War
the 10th day of July 1917

WAR DEPARTMENT

Washington, D. C. December 14, 1917

The Secretary of War has the honor to acknowledge the receipt of your letter of the 10th inst. and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. The same will be given the consideration it deserves and a report will be made to you as soon as possible.

WM. C. BROWN

Secretary of War

The Secretary of War has the honor to acknowledge the receipt of your letter of the 10th inst. and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. The same will be given the consideration it deserves and a report will be made to you as soon as possible.

INTERNATIONAL COPYRIGHT.

M E S S A G E

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A report from the Secretary of State, inclosing correspondence which has passed between the Department of State and the Governments of Switzerland and France on the subject of international copyright since July 9, 1886.

DECEMBER 15, 1886.—Referred to the Committee on the Judiciary and ordered to be printed.

To the Senate and House of Representatives :

I transmit herewith for your information a report from the Secretary of State, inclosing the correspondence which has passed between the Department of State and the Governments of Switzerland and France on the subject of international copyright since the date of my message of July 9, 1886, on this question.

GROVER CLEVELAND.

EXECUTIVE MANSION,
Washington, December 15, 1886.

To the President :

As supplementary to my report of July 9 last, printed in Executive Document No. 354, House of Representatives, Forty-ninth Congress, first session, I have the honor to inclose, with a view to its transmission to Congress, if deemed proper, the correspondence concerning the subject of international copyright which has been exchanged between this Department and the Governments of Switzerland and France since the date of my report above mentioned.

Respectfully submitted.

T. F. BAYARD.

DEPARTMENT OF STATE,
Washington, December 15, 1886.

List of papers inclosed.

SWITZERLAND.

1. Major Kloss to Mr. Bayard, July 20, 1886.
2. Major Kloss to Mr. Bayard, August 2, 1886.
3. Mr. Bayard to Major Kloss, August 18, 1886.
4. Mr. Bayard to Major Kloss, August 18, 1886.
5. Mr. Winchester to Mr. Bayard, September 13, 1886.
6. Mr. Bayard to Mr. Winchester, October 25, 1886.
7. Colonel Frey to Mr. Bayard, October 25, 1886.

FRANCE.

8. Mr. Roustan to Mr. Bayard, November 29, 1886.
9. Mr. Bayard to Mr. Roustan, December 1, 1886.

No. 1.

Major Kloss to Mr. Bayard.

[Translation.]

SWISS LEGATION,
Washington, July 20, 1886.

SIR: The undersigned, in pursuance of the instructions of his Government, has the honor to respectfully transmit to you its accompanying note concerning the protection of literary property.

The undersigned also takes pleasure in availing himself of this opportunity to assure you, Mr. Secretary of State, of his highest consideration.

The Swiss chargé d'affaires *ad interim*,

K. KLOSS.

[Inclosure 1 in Major Kloss's note of July 20.—Translation.]

Mr. Deucher to the Minister of Foreign Affairs of the United States of America.

BERNE, July 3, 1886.

EXCELLENCY: The Government of the French Republic, while informing us that it is ready to sign the international convention *for the protection of literary and artistic works*, the signature of which will take place in the conference to be opened at Berne on the 6th of September, 1886, transmits to us a draft of declaration which it would be glad to see adopted and signed by the plenipotentiaries present at the conference.

We have the honor of inclosing to your excellency copies of this draft, begging you to be good enough to examine it, and to instruct your plenipotentiaries in respect to this matter.

If we may be permitted to express our opinion as having initiated the meetings which elaborated the convention, we think that the draft of declaration is in entire conformity with the views which prevailed during the labors of the conferences of 1884 and of 1885. It is intended to dissipate certain doubts which might in fact be raised in the interpretation of the convention, and in virtue of this it might be adopted as an accompaniment to the latter, without, moreover, withdrawing from the determination taken by the last conference not to make any change in the text of the convention itself.

We avail ourselves with eagerness of this new opportunity of conveying to your excellency the assurance of our high consideration.

In the name of the Swiss Federal Council.

The President of the Confederation,

The Chancellor of the Confederation,

DEUCHER.

RINGIER.

[Inclosure 2 in Major Kloss's note of July 20.—Translation.]

DECLARATION.

Certain doubts having been raised as to the meaning of articles 5, 7, 9, and 10 of the convention concluded this day, the undersigned plenipotentiaries have recognized that it was necessary to explain them, and have with that intention adopted by common accord the following declaration :

(1) Section 2 of article 5 is applicable to novels published in numbers in newspapers.

(2) Novels published in numbers in newspapers being not so much a newspaper article as a literary work published under a particular form, it is understood that, in respect to their reproduction in the original or in translation, they are governed not by article 7, but by articles 2, 5, 10, and 11 of the convention concluded this day.

(3) The right of publication of dramatic and dramatico-musical works in the original language or in translation and the right of representation of these same works in the original language or in translation are entirely distinct from each other ; consequently the publication of such a work authorizes no one to represent it without the consent of its author, nor does its representation authorize its publication.

(4) The dramatization, that is, the transformation of a novel into a theatrical piece, or *vice versa*, is especially included among the indirect and unauthorized appropriations which article 10 qualifies as illicit reproductions.

Done in ——— copies at Berne on the ———.

No. 2.

Major Kloss to Mr. Bayard.

[Translation.]

SWISS LEGATION,

Washington, August 2, 1886.

MR. SECRETARY OF STATE: Referring to his note of the 20th ultimo, the undersigned has now the honor, by instruction from his Government, to send the inclosed note from it in regard to the protection of literary and artistic property.

In the absence of the minister, the undersigned avails himself, &c.

K. KLOSS.

[Inclosure in Major Kloss's note of August 2.—Translation.]

Mr. Deucher to the Minister of Foreign Affairs of the United States of America.

BERNE, July 17, 1886.

EXCELLENCY: Following up our note of the 6th (3d ?) instant, we have further to inform your excellency that our attention has been called to an omission made in the copy of the draft of convention for the *protection of literary and artistic works* elaborated by the international Conference at Berne in the month of September last.

The first paragraph of article 9 of the first draft of 1884, which is repeated almost word for word in the first paragraph of article 7 of the draft of 1885, was worded as follows :

“Articles taken from newspapers or periodicals published in one of the countries of the Union may be reproduced in original or in translation *in the other countries of the Union.*”

The Conference of 1885 thought it proper to eliminate the second paragraph of the first draft, enumerating the articles which by their nature were excluded from the right of reproduction, and to replace it by adding to the paragraph quoted above the words, “unless the authors or publishers have expressly forbidden it.”

When the new article was copied, they omitted incorporating in it the words *in the other countries of the Union*, to which no one had objected and which appear necessary to the correctness of the text, for the convention could not stipulate rights for subjects or citizens of non-contracting states.

Although it was agreed that no amendment should be introduced into the text adopted by the Conference of 1885, we are nevertheless of opinion that it would be proper to reinsert in the convention the few words which were actually eliminated, and we beg your excellency to kindly authorize your plenipotentiary to incorporate in article 7 the slight change which is proposed.

We avail ourselves of this occasion to renew to your excellency the assurance of our high consideration.

In the name of the Swiss Federal Council.

The President of the Confederation,

The Chancellor of the Confederation,

DEUCHER.

RINGIER.

No. 3.

Mr. Bayard to Major Kloss.

DEPARTMENT OF STATE,
Washington, August 18, 1886.

SIR: I have the honor to acknowledge the receipt of your note of the 20th ultimo, inclosing one dated the 3d ultimo from the President of the Swiss Confederation, relative to the subject of the protection of literary and artistic property.

Accept, sir, &c.,

T. F. BAYARD.

No. 4.

Mr. Bayard to Major Kloss.

DEPARTMENT OF STATE,
Washington, August 18, 1886.

SIR: I have the honor to acknowledge the receipt of your note of the 2d instant, inclosing one dated the 17th ultimo from the President of the Swiss Confederation relative to the subject of the protection of literary and artistic property.

Accept, sir, &c.,

T. F. BAYARD.

No. 5.

Mr. Winchester to Mr. Bayard.

No. 81.]

LEGATION OF THE UNITED STATES,
Berne, September 13, 1886.

SIR: I have the honor to report that, in obedience to your instructions, I attended, as the United States delegate, the International Copyright Conference, which met at Berne on the 6th instant, in the hall of the Council of States. The following states were represented: Great Britain, Germany, France, Spain, Italy, Belgium, Switzerland, Liberia, Hayti, Tunis, and the United States. Mr. Droz, vice-president of the Swiss Confederation, was again chosen to be president of the Confer-

ence, and the French ambassador at Berne, Mr. Arago, to be vice-president.

The declaration proposed by the French Government relative to the sense of articles 5, 7, 9, and 10, after a brief discussion, was withdrawn. A verbal omission in the draft convention being corrected, and any amendment being precluded by the terms of the draft, it remained only to fill in certain blanks, and by signing to transform the project of convention elaborated in September, 1885, into a definitive diplomatic act. The place of the next meeting of the delegates of the Union was unanimously fixed at Paris, and the time, to be named by the French Government and the bureau of the Union, not sooner than four years or exceeding six years from date of ratification. By the terms of the convention it must be ratified and the ratifications exchanged within one year, and it shall be put in force three months after said exchange. The bureau or international office is located at Berne, and is placed under the high authority of the superior administration of the Swiss Confederation.

In signing the definitive convention the several states made declaration of class, as follows:

First class.—Great Britain, France, Germany, and Italy.

Second class.—Spain.

Third class.—Belgium, Switzerland.

Fifth class.—Hayti.

Sixth class.—Tunis.

Notification was made to the effect that the accession of Great Britain would comprehend all the colonies and foreign possessions of Her Majesty. The delegates from Spain were unable to give a similar notice as to Spanish colonies from a failure to receive the authority in time, but the inclusion will be made previous to exchange of ratification.

Deeming it proper that I should make a statement to the Conference, in the sense of the instructions contained in your dispatch No. 61, of August 18 ultimo, the following remarks were submitted at the opening session:

Through a circular note of the Swiss Federal Council the Government of the United States has been invited, in concert with the other powers represented in the Copyright Conference held here in September, 1885, to instruct and empower a delegate to attend this Conference, and to sign in behalf of the United States the international convention for the general protection of literary and artistic property which was drafted *ad referendum* by the Conference of last year.

The Government of the United States again finds it impracticable to depute a plenipotentiary delegate and is constrained to withhold its formal participation as a signatory in the international convention, which resulted from the deliberations of 1885, and thus transform that convention into a full diplomatic engagement. To exhibit its benevolence, however, towards the principle involved, the Government of the United States desires, with the pleasure of this Conference, to be represented here, and has conferred upon me the honor to attend this Conference as a delegate, provided that my attendance is fully recognized and admitted to be without plenipotentiary powers, but under the limitation and reservation that the United States not being a party to the proposed convention reserve their privilege of future accession under provisions of article 18 thereof, which declares that "countries which have not joined in the present convention and which by their municipal laws assure legal protection to the rights whereof this convention treats, shall be admitted to accede thereto on their request to that effect."

Whilst not prepared to join in the proposed convention as a full signatory, the United States does not thereby wish to be understood as opposing the measure in any way, but, on the contrary, desires to reserve without prejudice the privilege of future accession to the convention, should it become expedient and practicable to do so. Should any question exist that the representation of the United States in this Conference, even under specific and recognized limitation, is such a participation as would suffice to exclude them from the category of the countries that have not "joined" in that instrument, and thereby to exclude them also from the privilege of

future accession should they desire to avail themselves of it, I desire to emphasize the fact that the course of the United States is in no wise intended or to be construed as a participation in the result either by acceptance or rejection. The position and attitude of the United States is one of expectancy and reserve. The Constitution of the United States enumerates among the powers especially reserved to Congress, that to "promote the progress of science and the useful arts of securing for limited terms to authors and inventors the exclusive right to their respective writings and discoveries"—which implies that the organization and limitation of measures to those ends rests with the legislative rather than the treaty-making powers.

Copyrights and patents are on the same footing of regulation of Federal legislation, and the executive branch of the Government cannot be unmindful of the continued pendency of its consideration by the legislative department, or disregard the constitutional right of that department to conclude international treaties on this important subject.

The question of international copyright is one of great interest to the United States. In fact few other nations can lay claim to greater concern than that naturally felt by a people distinguished for enlightened, extensive, and growing intellectual life, and while not infringing upon the constitutional prerogative of Congress to initiate and conclude copyright legislation, likewise to define the rights of aliens and citizens within its jurisdiction, the Executive in his first annual message to Congress, inviting its attention to the conference of last September, said, "action is certainly desirable to effect the object in view," and the secretary of state for foreign affairs, in his official dispatches relating to this conference, freely expresses his concurrence with the principle sought to be enunciated by the proposed convention, and conveys the hope that the time is not distant when rights of property in the creations of the mind may be universally secured under conditions favorable alike to the author and to the world's right to share in the diffusion of ideas. That the brain that creates is entitled to and should receive its just and full compensation, is a sentiment having its origin in the natural sense of honesty.

Literary property has been to some extent recognized in all ages, and is to-day guaranteed in almost every state by domestic legislation. This recognition and guarantee should be without distinction of nationality and without regard to political frontiers.

It is a matter of congratulation and redounds much to the credit of the Swiss Government, through whose active efforts the movement was successfully inaugurated and supplemented by the patient and intelligent labors of the general conferences held here, at its invitation, that a just and permanent settlement once for all of the grave question of the protection of works of literature and art, so long and urgently denied, is promised by means of a uniform, efficacious, and complete international convention.

At the close of my remarks the president of the Conference said :

The president thanks Mr. Winchester, and assures him in the name of the Conference that the accession of the United States would be received at any time with joy by all the contracting states. In regard to article 18 of the convention, to which Mr. Winchester alluded, it could not exclude the United States from accession, for, as a matter of fact, the United States have not taken part in the convention. They have only commissioned Mr. Winchester as a delegate with limited powers, as set forth by him, to take part in the Conference, not in the convention.

My position and relation to the convention, and any subsequent bearing it might have were fully and unanimously accepted by the assent of all the delegates to the declaration made by the president. The non-participation of the United States as one of the original signatory powers of the convention was a matter of free and avowed regret, there seeming to be but one sentiment, that no International Copyright Union could be complete without the United States, and great solicitude was expressed that the convention should contain no stipulations of a nature unacceptable to the United States. It was very natural that the Conference should have regarded it as very unfortunate that the United States were not prepared to enter the Union. They realized that a great and literary country like the United States should have had a potent voice in the formation of the convention and a paramount influence in procuring a favorable and acceptable basis for their adherence.

I may be permitted to express the opinion that the Government of the United States cannot afford to stand before the world as the only im-

portant and deeply concerned power persistently refusing to do common justice to foreign authors, and that it may be justly anticipated, that the Copyright Union being formed and acceded to by the more important European countries, it will before long feel it difficult to abstain from becoming a party to it also, and Congress will proceed to pave the way to the adhesion of the United States to the Union. There are large interests invested on the faith of the existing law that should receive proper consideration and be equitably dealt with. In the absence of international copyright, general and uniform, just and full compensation for literary or artistic property is out of the question, and the injustice is all the more conspicuous in view of the fact that the discrimination made against authors is not made against any other class of foreigners. Literary property is the only kind of personal property not protected by our law when the owner is not a citizen of the United States, even to the foreign owners of patents and trade-marks, which are so analogous to copyright, protection is accorded. The question should be solved in an acceptance of the moral view, that if it be right for a native citizen to have copyright in the productions of his intellect, it is equally right for an alien author to have the same property right recognized and protected. It is nearly half a century since Prussia first set the example of granting international copyright. In 1837 a law was passed that every country might secure copyright for its authors in Prussia upon granting reciprocity. This was followed by England in the succeeding year. In consequence of these, numerous international treaties of copyright have been negotiated. France set the example during the empire of forbidding the piracy of books and works of art published abroad without requiring reciprocity. Property in ideas is now conceded in every civilized country by legislative enactment, and the right to profit by the product of the brain should secure for the author, in the words of Burke, "that justice which is not a matter of climates and degrees." Whilst literary rights may not partake of the same unlimited nature as what is known technically as real or personal property, they should certainly be valid and secured within certain limitations.

Outside of the ethical or abstract rights, copyright is a modern development of the principle of property which every man of delicacy and honor must commend, regardless of the obscurity which may envelope its origin. The sophistical plea that the culture and education of the American people is to be imperilled or books to be placed beyond the reach of the masses by international copyright should be disregarded. If necessary, the reverse could be supported by many practical considerations. This, however, is not the question now submitted. The primary matter is to do what is right and just. In the long run it is the only safe and proves the most profitable course as well to nations as to individuals. Why should we force our native authors to suffer a great injustice from being forced into unusual competition with the wrongfully appropriated labor of foreign authors? The spirit of literary ambition and activity is daily becoming greater and more diffusive among our people, quickening and nourishing into life a vast and valuable native literature. It is impossible to determine the elements which must conspire to form and build up a native literature. It is a mystery not solved to the satisfaction of scholars why it should have put forth so early and transitory a bloom in Italy; why it should have ripened so late in Germany and Scotland; why in England alone it should endure no vicissitudes of seasons, but smile in eternal spring. But we may be confidently assured that a people to whom Providence has given a stirring history, a land abounding

in landscapes of beauty and grandeur, and a high degree of mental activity, extending the range of knowledge and scattering its seeds among all classes without price, cannot remain long destitute of a most extensive and superior native literature. Already the peer of the proudest in military achievements and material prosperity, truth, freedom, and civilization never presented a richer field and a brighter future for intellectual laborers than is to be found in the United States. Inexhaustible material sleeps in the womb of morning, and the forming hand of letters is rapidly seizing and utilizing these mighty elements. The day will soon come when the United States will be as conspicuous in the markets of the world for its literary as it is to-day for its material products.

I transmit, under a separate cover, the following documents:

- (1) Copy of convention, as signed.
- (2) *Procès-verbal* of the proceedings of the conference.
- (3) International copyright act passed by the British Parliament, June, 1886.

I have, &c.,

BOYD WINCHESTER.

[Inclosure 1 in Mr. Winchester's No. 81.]

CONVENTION CONCERNANT LA CRÉATION D'UNE UNION INTERNATIONALE POUR LA PROTECTION DES ŒUVRES LITTÉRAIRES ET ARTISTIQUES.*

Sa Majesté l'Empereur d'Allemagne, Roi de Prusse, Sa Majesté le Roi des Belges, Sa Majesté Catholique le Roi d'Espagne, en son nom Sa Majesté la Reine Régente du Royaume, le Président de la République Française, Sa Majesté la Reine du Royaume-Uni de la Grande-Bretagne et d'Irlande, Impératrice des Indes, le Président de la République d'Haïti, Sa Majesté le Roi d'Italie, le Président de la République de Libéria, le Conseil fédéral de la Confédération Suisse, Son Altesse le Bey de Tunis,

Également animés du désir de protéger d'une manière efficace et aussi uniforme que possible les droits des auteurs sur leurs œuvres littéraires et artistiques,

Ont résolu de conclure une Convention à cet effet, et ont nommé pour leurs Plénipotentiaires, savoir:

Sa Majesté l'Empereur d'Allemagne, Roi de Prusse:

Le Sieur Otto von Bülow, Conseiller intime actuel de légation et Chambellan de Sa Majesté, Son Envoyé extraordinaire et Ministre plénipotentiaire près la Confédération Suisse.

Sa Majesté Le Roi des Belges:

Le Sieur Maurice Delfosse, Son Envoyé extraordinaire et Ministre plénipotentiaire près la Confédération Suisse.

Sa Majesté Catholique le Roi d'Espagne, en son nom Sa Majesté la Reine Régente du Royaume:

Le Sieur Comte de la Almina, Sénateur, Envoyé extraordinaire et Ministre plénipotentiaire près la Confédération Suisse.

Le Sieur Don José Villa-Amil y Castro, Chef de section de la propriété intellectuelle au Ministère de l'instruction publique, Docteur en droit civil et canonique, Membre du Corps facultatif des Archivistes, Bibliothécaires et Archéologues, ainsi que des Académies de l'Histoire, des Beaux-Arts de St-Ferdinand, et de celle des Sciences de Lisbonne.

Le Président de la République Française:

Le Sieur François Victor Emmanuel Arago, Sénateur, Ambassadeur de la République française près la Confédération Suisse.

Sa Majesté la Reine du Royaume-Uni de la Grande-Bretagne et d'Irlande, Impératrice des Indes:

Sir Francis Ottiwell Adams, Chevalier Commandeur de l'Ordre très-distingué de St-Michel et St-George, Compagnon du très-honorable Ordre du Bain, Son Envoyé extraordinaire et Ministre plénipotentiaire à Berne; et

Le Sieur John Henry Gibbs Bergne, Compagnon de l'Ordre très-distinguée de St-Michel et St-George, Directeur au Département des affaires étrangères à Londres.

* Translated pages 46 *et seq.*, Ex. Doc. No. 354, Forty-ninth Congress, first session, H. R. Words introduced since that translation in the body of the convention and its accompaniments printed in small caps.

Le Président de la République d'Haïti :

Le Sieur Louis Joseph Janvier, Docteur en médecine de la Faculté de Paris, Lauréat de la Faculté de Médecine de Paris, Diplômé de l'École des Sciences politiques de Paris (Section administrative), Diplômé de l'École des Sciences politiques de Paris (Section diplomatique), Médaille décorative d'Haïti de troisième classe.

Sa Majesté le Roi d'Italie :

Le Sieur Charles Emmanuel Beccaria des Marquis d'Incisa, Chevalier des Ordres des S. S. Maurice et Lazare et de la Couronne d'Italie, son chargé d'affaires près la Confédération Suisse.

Le Président de la République de Libéria :

Le Sieur Guillaume Kœntzer, Conseiller impérial, Consul général, Membre de la Chambre de commerce de Vienne.

Le Conseil fédéral de la Confédération Suisse :

Le Sieur Numa Droz, Vice-Président du Conseil fédéral, Chef du Département du Commerce et de l'Agriculture ;

Le Sieur Louis Ruchonnet, Conseiller fédéral, Chef du Département de Justice et Police.

Le Sieur A. d'Orelli, Professeur de droit à l'Université de Zurich.

Son Altesse le Bey de Tunis :

Le Sieur Louis Renault, Professeur à la Faculté de droit de Paris et à l'École libre des sciences politiques, Chevalier de l'Ordre de la Légion d'honneur, Chevalier de l'Ordre de la Couronne d'Italie.

Lesquels, après s'être communiqué leurs pleins pouvoirs respectifs, trouvés en bonne et due forme, sont convenus des articles suivants :

ARTICLE PREMIER.

Les pays contractants sont constitués à l'état d'Union pour la protection des droits des auteurs sur leurs œuvres littéraires et artistiques.

ART. 2.

Les auteurs ressortissant à l'un des pays de l'Union, ou leurs ayants cause, jouissent, dans les autres pays, pour leurs œuvres, soit publiées dans un de ces pays, soit non publiées, des droits que les lois respectives accordent actuellement ou accorderont par la suite aux nationaux.

La jouissance de ces droits est subordonnée à l'accomplissement des conditions et formalités prescrites par la législation du pays d'origine de l'œuvre ; elle ne peut excéder, dans les autres pays, la durée de la protection accordée dans ledit pays d'origine.

Est considéré comme pays d'origine de l'œuvre, celui de la première publication, ou, si cette publication a lieu simultanément dans plusieurs pays de l'Union, celui d'entre eux dont la législation accorde la durée de protection la plus courte.

Pour les œuvres non publiées, le pays auquel appartient l'auteur est considéré comme pays d'origine de l'œuvre.

ART. 3.

Les stipulations de la présente Convention s'appliquent également aux éditeurs d'œuvres littéraires ou artistiques publiées dans un des pays de l'Union, et dont l'auteur appartient à un pays qui n'en fait pas partie.

ART. 4.

L'expression "œuvres littéraires et artistiques" comprend les livres, brochures ou tous autres écrits ; les œuvres dramatiques ou dramatico-musicales, les compositions musicales avec ou sans paroles ; les œuvres de dessin, de peinture, de sculpture, de gravure ; les lithographies, les illustrations, les cartes géographiques ; les plans, croquis et ouvrages plastiques, relatifs à la géographie, à la topographie, à l'architecture ou aux sciences en général ; enfin toute production quelconque du domaine littéraire, scientifique ou artistique, qui pourrait être publiée par n'importe quel mode d'impression ou de reproduction.

ART. 5.

Les auteurs ressortissant à l'un des pays de l'Union, ou leurs ayants cause, jouissent, dans les autres pays, du droit exclusif de faire ou d'autoriser la traduction de leurs ouvrages jusqu'à l'expiration de dix années à partir de la publication de l'œuvre originale dans l'un des pays de l'Union.

Pour les ouvrages publiés par livraisons, le délai de dix années ne compte qu'à dater de la publication de la dernière livraison de l'œuvre originale.

Pour les œuvres composées de plusieurs volumes publiés par intervalles, ainsi que pour les bulletins ou cahiers publiés par des sociétés littéraires ou savantes ou par des particuliers, chaque volume, bulletin ou cahier est, en ce qui concerne le délai de dix années, considéré comme ouvrage séparé.

Dans les cas prévus au présent article, est admis comme date de publication, pour le calcul des délais de protection, le 31 décembre de l'année dans laquelle l'ouvrage a été publié.

ART. 6.

Les traductions licites sont protégées comme des ouvrages originaux. Elles jouissent, en conséquence, de la protection stipulée aux articles 2 et 3 en ce qui concerne leur reproduction non autorisée dans les pays de l'Union.

Il est entendu que, s'il s'agit d'une œuvre pour laquelle le droit de traduction est dans le domaine public, le traducteur ne peut pas s'opposer à ce que la même œuvre soit traduite par d'autres écrivains.

ART. 7.

Les articles de journaux ou de recueils périodiques publiés dans l'un des pays de l'Union peuvent être reproduits, en original ou en traduction, DANS LES AUTRES PAYS DE L'UNION, à moins que les auteurs ou éditeurs ne l'aient expressément interdit. Pour les recueils, il peut suffire que l'interdiction soit faite d'une manière générale en tête de chaque numéro du recueil.

En aucun cas, cette interdiction ne peut s'appliquer aux articles de discussion politique ou à la reproduction des nouvelles du jour et des *faits divers*.

ART. 8.

En ce qui concerne la faculté de faire licitement des emprunts à des œuvres littéraires ou artistiques pour des publications destinées à l'enseignement ou ayant un caractère scientifique, ou pour des chrestomathies, est réservé l'effet de la législation des pays de l'Union et des arrangements particuliers existants ou à conclure entre eux.

ART. 9.

Les stipulations de l'article 2 s'appliquent à la représentation publique des œuvres dramatiques ou dramatico-musicales, que ces œuvres soient publiées ou non.

Les auteurs d'œuvres dramatiques ou dramatico-musicales, ou leurs ayants cause, sont, pendant la durée de leur droit exclusif de traduction, réciproquement protégés contre la représentation publique non autorisée de la traduction de leurs ouvrages.

Les stipulations de l'article 2 s'appliquent également à l'exécution publique des œuvres musicales non publiées ou de celles qui ont été publiées, mais dont l'auteur a expressément déclaré sur le titre ou en tête de l'ouvrage qu'il en interdit l'exécution publique.

ART. 10.

Sont spécialement comprises parmi les reproductions illicites auxquelles s'applique la présente Convention, les appropriations indirectes non autorisées d'un ouvrage littéraire ou artistique, désignées sous des noms divers, tels que : *adaptations, arrangements de musique, etc.*, lorsqu'elles ne sont que la reproduction d'un tel ouvrage, dans la même forme ou sous une autre forme, avec des changements, additions ou retranchements, non essentiels, sans présenter d'ailleurs le caractère d'une nouvelle œuvre originale.

Il est entendu que, dans l'application du présent article, les tribunaux des divers pays de l'Union tiendront compte, s'il y a lieu, des réserves de leurs lois respectives.

ART. 11.

Pour que les auteurs des ouvrages protégés par la présente Convention soient, jusqu'à preuve contraire, considérés comme tels et admis, en conséquence, devant les tribunaux des divers pays de l'Union à exercer des poursuites contre les contrefaçons, il suffit que leur nom soit indiqué sur l'ouvrage en la manière usitée.

Pour les œuvres anonymes ou pseudonymes, l'éditeur dont le nom est indiqué sur l'ouvrage est fondé à sauvegarder les droits appartenant à l'auteur. Il est, sans autres preuves, réputé ayant cause de l'auteur anonyme ou pseudonyme.

Il est entendu, toutefois, que les tribunaux peuvent exiger, le cas échéant, la production d'un certificat délivré par l'autorité compétente, constatant que les formalités prescrites, dans le sens de l'article 2, par la législation du pays d'origine ont été remplies.

ART. 12.

Toute œuvre contrefaite peut être saisie à l'importation dans ceux des pays de l'Union où l'œuvre original a droit à la protection légale.

La saisie a lieu conformément à la législation intérieure de chaque pays.

ART. 13.

Il est entendu que les dispositions de la présente Convention ne peuvent porter préjudice, en quoi que ce soit, au droit qui appartient au Gouvernement de chacun des pays de l'Union de permettre, de surveiller, d'interdire, par des mesures de législation ou de police intérieure, la circulation, la représentation, l'exposition de tout ouvrage ou production à l'égard desquels l'autorité compétente aurait à exercer ce droit.

ART. 14.

La présente Convention, sous les réserves et conditions à déterminer d'un commun accord, s'applique à toutes les œuvres qui, au moment de son entrée en vigueur, ne sont pas encore tombées dans le domaine public dans leur pays d'origine.

ART. 15.

Il est entendu que les Gouvernements des pays de l'Union se réservent respectivement le droit de prendre séparément, entre eux, des arrangements particuliers, en tant que ces arrangements conféreront aux auteurs ou à leurs ayants cause des droits plus étendus que ceux accordés par l'Union, ou qu'ils renfermeraient d'autres stipulations non contraires à la présente Convention.

ART. 16.

Un office international est institué sous le nom de *Bureau de l'Union internationale pour la protection des œuvres littéraires et artistiques*.

Ce Bureau, dont les frais sont supportés par les Administrations de tous les pays de l'Union, est placé sous la haute autorité de l'Administration supérieure de la Confédération Suisse, et fonctionne sous sa surveillance. Les attributions en sont déterminées d'un commun accord entre les pays de l'Union.

ART. 17.

La présente Convention peut être soumise à des révisions en vue d'y introduire les améliorations de nature à perfectionner le système de l'Union.

Les questions de cette nature, ainsi que celles qui intéressent à d'autres points de vue le développement de l'Union, seront traitées dans des Conférences qui auront lieu successivement dans les pays de l'Union entre les délégués desdits pays.

Il est entendu qu'aucun changement à la présente Convention ne sera valable pour l'Union que moyennant l'assentiment unanime des pays qui la composent.

ART. 18.

Les pays qui n'ont point pris part à la présente Convention et qui assurent chez eux la protection légale des droits faisant l'objet de cette Convention, seront admis à y accéder sur leur demande.

Cette accession sera notifiée par écrit au Gouvernement de la Confédération Suisse, et par celui-ci à tous les autres.

Elle emportera, de plein droit, adhésion à toutes les clauses et admission à tous les avantages stipulés dans la présente Convention.

ART. 19.

Les pays accédant à la présente Convention ont aussi le droit d'y accéder en tout temps pour leurs colonies ou possessions étrangères.

Ils peuvent, à cet effet, soit faire une déclaration générale par laquelle toutes leurs colonies ou possessions sont comprises dans l'accession, soit nommer expressément celles qui y sont comprises, soit se borner à indiquer celles qui en sont exclues.

ART. 20.

La présente Convention sera mise à exécution trois mois après l'échange des ratifications, et demeurera en vigueur pendant un temps indéterminé, jusqu'à l'expiration d'une année à partir du jour où la dénonciation en aura été faite.

Cette dénonciation sera adressée au Gouvernement chargé de recevoir les accessions. Elle ne produira son effet qu'à l'égard du pays qui l'aura faite, la Convention restant exécutoire pour les autres pays de l'Union.

ART. 21.

La présente Convention sera ratifiée, et les ratifications en seront échangées à BERNE, dans le délai d'un an au plus tard.

En foi de quoi, LES PLÉNIPOTENTIAIRES RESPECTIFS L'ONT SIGNÉE ET Y ONT APPOSÉ LE CACHET DE LEURS ARMES.

Fait à BERNE, le NEUVIÈME JOUR DU MOIS DE SEPTEMBRE DE L'AN MIL HUIT CENT QUATRE-VINGT-SIX.

Pour l'Allemagne :

[L. s.]

OTTO VON BÜLOW.

Pour la Belgique :

[L. s.]

MAURICE DELFOSSE.

Pour l'Espagne :

[L. s.]

COMTE DE LA ALMINA.

[L. s.]

JOSÉ VILLA-AMIL Y CASTRO.

Pour la France :

[L. s.]

EMMANUEL ARAGO.

Pour la Grande-Bretagne :

[L. s.]

F. O. ADAMS.

[L. s.]

J. H. G. BERGNE.

Pour Haïti :

[L. s.]

LOUIS JOSEPH JANVIER.

Pour l'Italie :

[L. s.]

E. DI BECCARIA.

Pour Libéria :

[L. s.]

KCENTZER.

Pour la Suisse :

[L. s.]

DROZ.

[L. s.]

L. RUCHONNET.

[L. s.]

A. D'ORELLI.

Pour la Tunisie :

[L. s.]

L. RENAULT.

Article additionnel.

Les Plénipotentiaires réunis pour signer la Convention concernant la création d'une Union internationale pour la protection des œuvres littéraires et artistiques, sont convenus de l'article additionnel suivant, qui sera ratifié en même temps que l'acte auquel il se rapporte :

La Convention conclue à la date de ce jour n'affecte en rien le maintien des Conventions actuellement existantes entre les pays contractants, en tant que ces Conventions confèrent aux auteurs ou à leurs ayants cause des droits plus étendus que ceux accordés par l'Union, ou qu'elles renferment d'autres stipulations qui ne sont pas contraires à cette Convention.

En foi de quoi, LES PLÉNIPOTENTIAIRES RESPECTIFS ONT SIGNÉ LE PRÉSENT ARTICLE ADDITIONNEL.

Fait à BERNE, le NEUVIÈME JOUR DU MOIS DE SEPTEMBRE DE L'AN MIL HUIT CENT QUATRE-VINGT-SIX.

Pour l'Allemagne :

OTTO VON BÜLOW.

Pour la Belgique :

MAURICE DELFOSSE.

Pour l'Espagne :

ALMINA.
VILLA-AMIL.

Pour la France :

EMM. ARAGO.

Pour la Grande-Bretagne :

F. O. ADAMS.
J. H. G. BERGNE.

Pour Haïti :

LOUIS JOSEPH JANVIER.

Pour l'Italie :

E. DI BECCARIA.

Pour Libéria :

KCENTZER.

Pour la Suisse :

DROZ.
L. RUCHONNET.
A. D'ORELLI.

Pour la Tunisie :

L. RENAULT.

Protocole de clôture.

Au moment de procéder à la signature de la Convention conclue à la date de ce jour, les Plénipotentiaires soussignés ont déclaré et stipulé ce qui suit :

1. Au sujet de l'article 4, il est convenu que ceux des pays de l'Union où le caractère d'œuvres artistiques n'est pas refusé aux œuvres photographiques s'engagent à les admettre, à partir de la mise en vigueur de la Convention conclue en date de ce jour, au bénéfice de ses dispositions. Ils ne sont, d'ailleurs, tenus de protéger les auteurs des dites œuvres, sauf les arrangements internationaux existants ou à conclure, que dans la mesure où leur législation permet de le faire.

Il est entendu que la photographie autorisée d'une œuvre d'art protégée jouit, dans tous les pays de l'Union, de la protection légale, au sens de ladite Convention, aussi longtemps que dure le droit principal de reproduction de cette œuvre même, et dans les limites des conventions privées entre les ayants droit.

2. Au sujet de l'article 9, il est convenu que ceux des pays de l'Union dont la législation comprend implicitement, parmi les œuvres dramatico-musicales, les œuvres chorégraphiques, admettent expressément lesdites œuvres au bénéfice des dispositions de la Convention conclue en date de ce jour.

Il est d'ailleurs entendu que les contestations qui s'élèveraient sur l'application de cette clause demeurent réservées à l'appréciation des tribunaux respectifs.

3. Il est entendu que la fabrication et la vente des instruments servant à reproduire mécaniquement des airs de musique empruntés au domaine privé ne sont pas considérées comme constituant le fait de contrefaçon musicale.

4. L'accord commun prévu à l'article 14 de la Convention est déterminé ainsi qu'il suit :

L'application de la Convention aux œuvres non tombées dans le domaine public au moment de sa mise en vigueur aura lieu suivant les stipulations y relatives contenues dans les conventions spéciales existantes ou à conclure à cet effet.

A défaut de semblables stipulations entre pays de l'Union, les pays respectifs régleront, chacun pour ce qui le concerne, par la législation intérieure, les modalités relatives à l'application du principe contenu à l'article 14.

5. L'organisation du Bureau international prévu à l'article 16 de la Convention sera fixée par un règlement que le Gouvernement de la Confédération Suisse est chargé d'élaborer.

La langue officielle du Bureau international sera la langue française.

Le Bureau international centralisera les renseignements de toute nature relatifs à la protection des droits des auteurs sur leurs œuvres littéraires et artistiques. Il les coordonnera et les publiera. Il procédera aux études d'utilité commune intéressant l'Union et rédigera, à l'aide des documents qui seront mis à sa disposition par les diverses Administrations, une feuille périodique, en langue française, sur les questions concernant l'objet de l'Union. Les Gouvernements des pays de l'Union se réservent d'autoriser, d'un commun accord, le Bureau à publier une édition dans une ou plusieurs autres langues, pour le cas où l'expérience en aurait démontré le besoin.

Le Bureau international devra se tenir en tout temps à la disposition des membres de l'Union pour leur fournir, sur les questions relatives à la protection des œuvres littéraires et artistiques, les renseignements spéciaux dont ils pourraient avoir besoin.

L'Administration du pays où doit siéger une Conférence préparera, avec le concours du Bureau international, les travaux de cette Conférence.

Le Directeur du Bureau international assistera aux séances des Conférences et prendra part aux discussions sans voix délibérative. Il fera sur sa gestion un rapport annuel qui sera communiqué à tous les membres de l'Union.

Les dépenses du Bureau de l'Union internationale seront supportées en commun par les pays contractants. Jusqu'à nouvelle décision, elles ne pourront pas dépasser la somme de soixante mille francs par année. Cette somme pourra être augmentée au besoin par simple décision d'une des Conférences prévues à l'article 17.

Pour déterminer la part contributive de chacun des pays dans cette somme totale des frais, les pays contractants et ceux qui adhéreraient ultérieurement à l'Union seront divisés en six classes contribuant chacune dans la proportion d'un certain nombre d'unités, savoir :

	Unités.
1 ^{re} classe	25
2 ^{me} classe	20
3 ^{me} classe	15
4 ^{me} classe	10
5 ^{me} classe	5
6 ^{me} classe	3

Ces coefficients seront multipliés par le nombre des pays de chaque classe, et la somme des produits ainsi obtenus fournira le nombre d'unités par lequel la dépense totale doit être divisée. Le quotient donnera le montant de l'unité de dépense.

Chaque pays déclarera, au moment de son accession, dans laquelle des susdites classes il demande à être rangé.

L'Administration suisse préparera le budget du Bureau et en surveillera les dépenses, fera les avances nécessaires et établira le compte annuel qui sera communiqué à toutes les autres Administrations.

6. La prochaine Conférence aura lieu à PARIS, dans LE DÉLAI DE QUATRE À SIX ANS À PARTIR DE L'ENTRÉE EN VIGUEUR DE LA CONVENTION.

LE GOUVERNEMENT FRANÇAIS EN FIXERA LA DATE DANS CES LIMITES, APRÈS AVOIR PRIS L'AVIS DU BUREAU INTERNATIONAL.

7. Il est convenu que, pour l'échange des ratifications prévu à l'article 21, chaque Partie contractante remettra un seul instrument, qui sera déposé, avec ceux des autres pays, aux archives du Gouvernement de la Confédération Suisse. Chaque Partie recevra en retour un exemplaire du procès-verbal d'échange des ratifications, signé par les Plénipotentiaires qui y auront pris part.

Le présent Protocole de clôture, qui sera ratifié en même temps que la Convention, conclue à la date de ce jour, sera considéré comme faisant partie intégrante de cette Convention, et aura même force, valeur et durée.

En foi de quoi, LES PLÉNIPOTENTIAIRES RESPECTIFS L'ONT REVÊTU DE LEUR SIGNATURE.

Fait à BERNE, le NEUVIÈME JOUR DU MOIS DE SEPTEMBRE DE L'AN MIL HUIT CENT QUATRE-VINGT-SIX.

Pour l'Allemagne :

OTTO VON BÜLOW.

Pour la Belgique :

MAURICE DELFOSSE.

Pour l'Espagne :

ALMINA,
VILLA-AMIL.

Pour la France :

EMM. ARAGO.

Pour la Grande-Bretagne :

F. O. ADAMS.
J. H. G. BERGNE.

Pour Haïti :

LOUIS JOSEPH JANVIER.

Pour l'Italie :

E. DI BECCARIA.

Pour Libéria :

KCENTZER.

Pour la Suisse :

DROZ.
L. RUCHONNET.
A. D'ORELLI.

Pour la Tunisie :

L. RENAULT.

[Inclosure 2 in Mr. Winchester's No. 81.—Translation.]

REPORT OF THE FIRST SESSION OF THE CONFERENCE FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS, SEPTEMBER 6, 1886.

The session opened at ten minutes past eleven, at the hall of the Council of the States. The following delegates were present :

Germany : His Excellency Otto von Bülow, actual Privy Counselor of Legation and Chamberlain of His Majesty the Emperor of Germany, King of Prussia, His Envoy Extraordinary and Minister Plenipotentiary, near the Swiss Confederation, at Berne.

Belgium : His Excellency Maurice Delfosse, Envoy Extraordinary and Minister Plenipotentiary at Berne.

Spain : His Excellency Senator Don Melchior Sangro y Rueda, Count of Almina, Envoy Extraordinary and Minister Plenipotentiary of Spain at Berne. Don José Villa-Amil y Castro, Chief of the Bureau of Intellectual Property at the Ministry of Public Instruction.

The United States of America : Mr. Boyd Winchester, Minister Resident and Consul-General of the United States at Berne.

France : His Excellency Emmanuel Arago, Ambassador of the Republic of France near the Swiss Confederation at Berne.

Great Britain: His Excellency Sir Francis O. Adams, K. C. M. G., C. B., Envoy Extraordinary and Minister Plenipotentiary of Her Britannic Majesty at Berne. Mr. J. H. G. Bergne, K. C. M. G., director at the Department of Foreign Affairs, London.

Hayti: Mr. Louis Joseph Janvier, Doctor of Medicine of the Faculty of Paris, Laureate of the Faculty of Medicine of Paris, Graduate of the School of Political Science at Paris (administrative section), Graduate of the School of Political Science at Paris (diplomatic section).

Italy: Mr. Charles Emmanuel Beccaria, Marquis of Incisa, Chargé d'Affaires of His Majesty the King of Italy, near the Swiss Confederation, at Berne.

Japan: Mr. Kurokava, Counselor of the Legation of Japan, at Rome, delegate.

Liberia: Mr. William Kœntzner, Imperial Counselor, Consul-General of the Republic of Liberia, and member of the Chamber of Commerce of Vienna.

Switzerland: Federal Counselor Numa Droz, Vice-President of the Federal Council, head of the Department of Commerce and Agriculture. Federal Counselor Louis Ruchonnet, head of the Department of Justice and Police. Mr. A. d'Orelli, Professor of Law at the University of Zurich.

Tunis: Mr. Louis Renault, Professor in the Paris Law Faculty, and at the Free School of Political Science.

Federal Counselor NUMA DROZ opened the session by delivering the following discourse:

"Gentlemen, three years ago, under the auspices of the International Literary Association, a meeting was held in this hall, composed of men of letters, artists, and jurists from various countries. The object of that meeting was to prepare the basis of a universal convention for the protection of authors' rights. A draft was prepared by common consent and transmitted to the Swiss Federal Council, which was pleased to undertake to communicate the same to the Governments of other states, and which, at the same time, took the initiative in calling a diplomatic conference with a view to establishing an International Union similar to those already existing in other parts of the world, having special reference to the protection of industrial property.

"This initiative was generally regarded with favor. In the following year, on the 8th of September, 1884, I had the honor to extend here, in the name of the Federal Council, a welcome to the representatives of Germany, Austria-Hungary, Belgium, Costa Rica, France, Great Britain, Hayti, Paraguay, the Netherlands, Salvador, Sweden and Norway, and also of Switzerland. Other states which had expressed their desire to promote the projected work had been unable, owing to various circumstances, to send delegates to Berne.

"The Federal Government had substituted a more complete programme (which was still further developed by the Conference) for the rudimentary draft of the International Literary Association. A draft of a convention was the outgrowth of these laborious deliberations; it was, together with a final report that had been signed by all the delegates present, submitted by the Federal Council to the Governments of all civilized countries, with a request that they would examine it and give definitive instructions to their delegates relative to a future conference.

"On the 7th of September, 1885, we had the pleasure to greet the representatives of the following countries: Germany, Belgium, Spain, the United States of America, France, Great Britain, Hayti, Honduras, Italy, the Netherlands, Sweden and Norway, Switzerland, and Tunis.

"The work has made rapid progress in the minds of those interested. The truth is that, as the time for the conclusion drew near, the difficulties of a general understanding increased. The countries that were most advanced on the subject of the protection of literary and artistic works naturally desired an international codification, corresponding as nearly as possible to their ideal. Others declared that they could not follow these countries so far at the outset. Each country was governed, moreover, by certain peculiarities of its own domestic laws and felt a repugnance to sacrificing too much of its autonomy. It was necessary for the labor of the Conference to be even more minute and more intense than it had been on the first occasion. Reciprocal concessions had to be made, and when, after numerous sessions, the final agreement was reached, we felt that we had prepared a convention that deserved to be approved by both parties as a work of genuine progress, and one that wisely took account of the possibilities of the moment, granted real protection to authors, and that was susceptible, without any essential remodeling, of such improvements as experience might indicate and as the future might demand. It was universally admitted that the text agreed upon was to be final, and that consequently no modifications were admissible.

"To-day, Messrs. Plenipotentiaries, you are called upon to convert, by your signatures, this draft of the convention into a diplomatic instrument. Allow me to make suitable acknowledgements to all, both present and absent, who have effectively taken part in this important treaty, which is destined to stimulate the efforts of human genius by the legitimate protection granted to its toil.

"Yes, gentlemen, in order to accomplish this happy result, legal science, practical enlightenment, a spirit of conciliation, and the conscientious work of the delegates to the two diplomatic conferences that preceded this one have been necessary. To be just, I ought to name each of them, and to mention the part taken by each individual in the discussions relative to the whole subject or its details. I must, however, confine myself to returning my thanks to them collectively, begging your permission to make special mention of the eminent services rendered to the work by some of our colleagues.

"We had the pleasure of having, as the only vice-president of the preceding Conferences, his excellency Mr. Arago, ambassador of France, whom Counselor Reichardt, the delegate of Germany, proposed for this office 'as a testimonial,' as he said, 'not only to an eminent friend of our work, but also to France, which has always been among the first to lend her powerful support whenever it has been sought to proclaim, to make known, or to strengthen the protection of authors' rights.' Mr. Arago brought to the discharge of his duties the most liberal and conciliatory spirit. He endeavored to bring about—and in this he fully succeeded—such settlements as were best calculated to secure the assent of all, and at the same time he did all in his power to calm, both here and elsewhere, that impatience which might have endangered the success of the convention, to the detriment of the authors whose works we desire to see protected in the greatest number of countries possible.

"Another special merit belongs to the British delegates, his excellency Sir Francis Adams and his colleague, Mr. Bergne, head of the treaty department of the foreign office. The adhesion of Great Britain was of capital importance to the success of the Union, but almost insurmountable obstacles connected with certain provisions of its domestic laws seemed to render it vain to hope that that country would be among the immediate signers of the convention. Nevertheless, Messrs. Adams and Bergne assured us last year that they would spare no pains to bring about the adhesion of their country. They have shown us that the word 'impossible' occupies but a small space in their dictionary, for not only do they now bring us the adhesion of Great Britain, but also that of her colonies, making altogether a population of more than three hundred millions of souls. This magnificent result is due to the efforts, perseverance, and perspicacity, on which we to-day most heartily congratulate these two colleagues of ours.

"As constituted at its outset, gentlemen, the International Union for the protection of literary and artistic works represents a large part of the human race. It will govern authors' rights in a territory containing about five hundred millions of people. It embraces in Europe the countries that are most active in point of literary and artistic production, and we confidently hope that it will soon receive the adhesion of the United States of America, which occupy so distinguished a place in the world in this regard; the expression of sympathy contained in a recent message of President Cleveland, and the presence of Minister Winchester in our midst, give us the assurance that this will speedily be the case.

"Among the states which have not become associated with us we regret to see the entire group of those in which the Slavonic languages are in use. Nevertheless, the literary and artistic movement is attracting more and more attention in those countries, and is constantly regarded with greater interest by those nations in which intellectual culture has long existed. We trust that the day is not far distant when the Governments of these States will become aware that the protection of authors' rights is one of the best means of promoting literature and the arts, which are the source of all civilization, and which lie at the root of all genuine superiority.

We regret, moreover, not to see among us the representatives of two countries which took part in the preceding Conferences, viz, Austria-Hungary and the Netherlands. Their laws, however, render it impossible for them to adhere for the present. It will doubtless not be long before they join us.

"We have thus far received no tidings of any action taken by Sweden and Norway, whose representatives took a prominent part in the preceding Conferences.

"We supposed that the case was merely one of delay, and that if these countries were not to be among the signers of the convention they would be the first to adhere thereto. This supposition has been fully confirmed by a communication from the minister of foreign affairs at Stockholm, received this very morning, from which I extract the following passage: 'Since it was not possible to complete the necessary legislation either in Sweden or Norway during the parliamentary session of 1885, the Government of the King regrets to be unable to take part in the new Conference, but it desires to express to the federal council, and through it to the states represented at the Conference, its confident hope that it will be able, at the expiration of the time fixed for the exchange of ratifications, to adhere to the stipulations of the convention and its additional articles.'

"Finally, some states have declared that the convention does not interest them, that they have no national literature, and that they desire to profit freely by the intellectual productions of others. For my part, I think that those states are in the

wrong path, and that they are in error concerning their true interests. By recognizing the rights of authors they would encourage home production, and would cease to be the mere tributaries of other nations, and to be wholly under outside intellectual influence, and exchange of ideas would soon arise between them and us which would be of advantage to each, for arts and letters need to be constantly renewed. The man of modern times is constantly becoming more accustomed to seek his mental as well as his bodily nourishment under every sky and in every climate, and who knows what treasures might be produced by the literary and artistic genius of young nations if it were sufficiently stimulated and encouraged?

"Be this as it may, gentlemen, we have just reason to feel confidence in the future of our work. It is the solemn consecration of a principle of right and justice; its effect is to draw closer the bonds which should unite mankind; it will certainly contribute to the encouragement of the most noble productions of the human race; and for all these reasons it is a work of civilization which does honor to the period in which we live.

"Switzerland, gentlemen, is proud of having presided over the preparation of this work, and of being deemed worthy by you more immediately to promote the accomplishment thereof by becoming the seat of the International organ which is to serve as the center of the Union. I express our heartfelt gratitude to you for this, and I am happy to greet in the name of our people the new creation which is a daughter of the ideal, and which is destined to be the mother of manifold progress, resulting from the present Conference.

"I declare this Conference opened, and I beg you to organize by choosing a president."

His excellency Mr. EMMANUEL ARAGO replied as follows:

"Gentlemen, we all foresaw that, in referring to the laborious International Conferences of 1884 and 1885, the eminent speaker to whom we have just listened would almost entirely forget the man who so wisely directed their useful labors. I think, therefore, that we should unanimously make amends for his forgetfulness, and that we cannot do so better than by choosing Federal Counselor Numa Droz, by acclamation, as president of this Conference."

Mr. DROZ accepted and thanked the delegates.

His excellency Mr. von BÜLOW proposed that his excellency Mr. Arago should, as had been done in the previous years, be designated as the sole vice-president of the Conference.

This proposal was adopted by acclamation.

His excellency Mr. ARAGO accepted, and expressed his thanks to the meeting.

Sir F. ADAMS addressed the Conference as follows:

"I desire, in the first place, most sincerely to thank you, in the name of the English delegates, for the very flattering words which you have had the kindness to utter in reference to us. All that we can say is that we have made our best efforts to attain the object of your wishes, which object is now on the point of being accomplished.

"In the second declaration which I made to the Conference of 1885, I thanked my honorable colleagues for the genuine spirit of conciliation, of which they had given evidence by assenting to certain modifications proposed by the English delegation with the view of facilitating our task with the Government of the Queen. The report prepared by Mr. Bergne and myself, which has been published in the British Blue Book, shows that we earnestly urged our Government to introduce into its domestic laws such modifications as were necessary to permit Great Britain to become one of the original signers of the International Convention. The conference which took place at the London foreign office early this year, under the presidency of Mr. Bryce, then under secretary of state, gave rise to laborious discussions, which, however, resulted happily, and the bill which grew out of them was adopted by both houses of Parliament without serious opposition. The Queen was pleased to give her approval thereto. As to the English colonies, they had already hastened, one after the other, to give in their adhesion to the bill.

"Now, gentlemen, the task of us all is about to be completed. Our last act will be the signing of this international convention, whereby we shall form a new union, which we trust will each year assume larger proportions, until it shall number all the civilized nations of the world among its members, and thus become not only an *international* but a *universal* union.

"This, gentlemen, is, I think, the desire of us all, we being happy to be the founders of a genuine work of peace.

"This work of peace is destined to draw still closer the bonds that unite nations. It will be another union, whose central point will be at Berne, in that Switzerland which, by its neutral position, has gradually become, with the cordial assent of other nations, the home of international unions."

The PRESIDENT presented as secretaries Mr. Charles Soldan, judge of the cantonal court of the canton of Vaud, at Lausanne, and Mr. Bernard Frey, secretary of the international bureau for the protection of industrial property at Berne.

On motion of the PRESIDENT, the presentation of powers was deferred until a future session.

The assembly then took up the discussion of the addition proposed by the Swiss Federal Council to the first paragraph of article 7 of the draft of the convention, which is printed in italics in the following text :

"Articles in newspapers or periodical publications issued in any country of the Union may be reproduced either in the original or in a translation *in the other countries of the Union*, unless the authors or publishers thereof expressly forbid this. As regards periodicals, it will be sufficient for the prohibition to be made in a general way on the first page of each number of the periodical."

The PRESIDENT remarked that these words, which were in the draft adopted in 1884, were omitted in the text adopted last year, but that there might be objections to their omission.

His excellency Mr. von BÜLOW thought that this addition was not absolutely necessary to render the meaning of article 7 clear, and stated that it had been agreed last year to make no changes in the draft of 1885. He added that he had received instructions to vote against the proposed addition.

Sir FRANCIS ADAMS declared that he could accept the amendment in question.

Messrs. RENAULT and BECCARIA made the same statement as regarded themselves.

The PRESIDENT put the proposed addition to vote, and all the votes, excepting that of Germany, were in favor of it.

The Conference then took up the discussion of the declaration proposed by France, which was as follows :

"Some doubts having arisen with regard to the sense of articles 5, 7, 9, and 10 of the convention concluded under this date, the undersigned plenipotentiaries have thought that there was reason to elucidate the same, and to this end they have unanimously adopted the following declaration :

"(1) Section 2 of article 5 is applicable to serial stories published in newspapers.

"(2) As serials published in newspapers are rather literary works published in a special form than they are newspaper articles, it is understood that as regards their reproduction, either in the original or in a translation, they are governed, not by article 7, but by articles 2, 5, 10, and 11 of the convention this day concluded.

"(3) The right of publication of dramatic and dramatico-musical works, either in the original language or in a translation, and the right of bringing such works on the stage, either in the original language or in a translation, are absolutely distinct from each other; consequently the publication of such a work authorizes nobody to bring it on the stage without the consent of its author, any more than its representation on the stage gives authority to publish it.

"(4) The dramatization, that is to say, the conversion of a novel into a play, or *vice versa*, is especially comprised among the unauthorized indirect appropriations which are characterized by article 10 as unlawful reproductions."

Mr. BECCARIA said that Italy considered the first three points of the draft of the declaration as purely explanatory, and that, as such, she might accept them; but as to the fourth point, she thought that it implied a modification of the convention, and that she consequently did not think that she could adhere thereto.

His excellency Mr. ARAGO, in view of the opposition manifested by the delegate of Italy, and with a view to securing the signatures of all the delegates, announced that he withdrew the draft of a declaration.

Mr. RENAULT expressed himself as follows :

"The French Government thought that its draft of a declaration introduced no modification, not even the slightest, in the convention, and that it simply expressly formulated certain solutions consecrated by the convention. Its object was to enlighten the numerous interested parties (literary men, editors of newspapers or reviews, &c.), who are obliged to observe or to invoke the treaty. We think that few words would suffice to show that the solutions proposed result from the convention and from the deliberations which paved the way to it. We are happy to state that the Federal Council, which had an excellent opportunity, in all respects, to become acquainted with the letter and spirit of the provisions adopted last year, recommended the adoption of our draft of a declaration in communicating the same to the contracting Governments. In view of the doubts and scruples manifested by the representatives of several countries, a discussion would have to be reopened. We do not desire this. We remain faithful to the agreement made last year to consider the debates as being closed. Moreover, we are desirous to reach, as speedily as possible, a definitive conclusion of the treaty, which is to create the International Union for the protection of literary and artistic works. While fully maintaining the ground taken by the French Government in proposing its draft, we therefore think proper to withdraw it, in order not to retard the signing of the convention."

M. BERGNE made the following declaration :

"In view of the observations of Mr. Renault, it seems proper for me to explain Great Britain's position on the subject of the declaration which was proposed by France.

"During the last session of Parliament it was not possible to present a bill for the complete codification of our laws relative to literary and artistic property. It was found necessary to be content with causing the adoption of a law introducing modifications of such a nature as to permit the adhesion of Great Britain to the International Union.

"Now, according to our present laws, a dramatized novel may be brought upon the stage without the consent of its author. The dramatization cannot, however, be published in book form.

"We are willing to recommend to our Government that, if a bill for the codification of the laws now existing is hereafter presented to the British Parliament, a clause be inserted therein prohibiting the stage representation, as well as the unauthorized dramatization of a novel. It is, however, evident that, in the present state of our domestic laws, we can not now sign a declaration to that effect.

"As to the principles stated in the first three paragraphs, our Government has no objection to make to them. It regards these paragraphs as simply explanatory."

His excellency Mr. von BÜLOW, stated that his Government considered the draft of a declaration as not being in conformity with the draft of a convention of 1885, and that he would have been obliged to vote in the negative if the French proposition had been maintained.

In view of the withdrawal of the proposed declaration no vote was taken on it.

The PRESIDENT reminded the Conference that it was proper to fill the blank left *sub numero* six of the draft of a final protocol. He then opened the discussion relative to the fixing of the time and place for the next Conference, and also relative to the following proposition, presented by the English delegation :

"The next meeting of the Conference shall take place ten years from the signing of the convention, unless four of the signatory powers collectively ask that such meeting take place sooner."

His excellency Sir F. ADAMS made the following remarks in connection with this proposition :

"The English delegation has been instructed by its Government to make the proposition now before you, relative to the day when it will be proper for the next Conference to meet.

"Its reasons are as follows :

"Our Government thinks that revisions which might require modifications of the domestic laws of the contracting states should not take place too often.

"If the state of things established by the present convention is not allowed to continue for a period of considerable length it will never be possible to determine with precision the changes necessary to be introduced therein. Each addition to or modification of the convention might bring about corresponding changes in the law of some of the contracting states, if it is desired to maintain harmony of principles in the Union. Considerable difficulties might arise on this head.

"In England, for instance, we have succeeded, not without a good deal of trouble, in causing the enactment of a law based upon the very text of the convention, and it would be impossible to secure the repeal of that law before a considerable time had elapsed.

"In our opinion, it will be highly advantageous to allow the convention to remain in force just as it is for a period of ten years from the date when it is signed, so that the laws of each state may maintain sufficient stability in the matter.

"If, however, in the interval, four of the signatory powers collectively ask for a meeting at an earlier date, our Government will be willing to second their views.

His excellency Mr. von BÜLOW declared that he accepted the above proposition, provided that the following addition were adopted :

"Such a request shall not, however, be presented in less than four years from the signing of the convention."

In the name of the English delegation, Sir F. ADAMS adhered to this proposition.

Mr. RENAULT opposed the fixing of so distant a date. While understanding this proposition on the part of England, which had just modified its domestic laws, he thought that that country was sufficiently protected against the contingency of a revision of the convention in a manner not in harmony with its wishes by the third paragraph of article 17 of the convention, according to which no change in the convention was to be valid for the Union unless it received the unanimous assent of the countries composing the same. He thought that there was no reason to abrogate what had been done on this subject by other international unions. The fixing of an early date for the next Conference had, he thought, the double advantage of stimulating the signatory powers in respect to the execution of the convention and of encouraging the other states to avail themselves of the meeting of the Conference in order to give their adhesion to the Union. These arguments were still more applicable to the German proposition, which would prevent the meeting of another Conference even if the contracting countries were almost unanimous in deeming it necessary.

Consequently Mr. RENAULT proposed that the English proposition be rejected, and that the date of the next meeting be fixed without further delay.

Mr. RUCHONNET likewise thought that a date should be fixed, but that it should not be one very near at hand, so that the Conference might not meet again before sufficient experience had furnished it with matter for its labors. He proposed to fix the time for the meeting of the next Conference in the year 1892.

His excellency Mr. ARAGO and Mr. RENAULT, while accepting this date, asked that the majority of the countries of the Union might decide that the Conference should meet at an earlier date.

The PRESIDENT remarked that it would be better to take as the point of departure the date when the Convention went into operation rather than the date when it was signed, as provided in the English proposition. In order to satisfy the different opinions expressed he proposed to say that the next Conference should be held within from four to six years from the day when the convention went into operation, and that the date thereof should be fixed within these limits by the Government of the country in which the meeting should be held, in accordance with the previous approval of the international bureau.

The Conference unanimously adopted this proposition, and then, likewise unanimously, on the motion of his excellency Sir F. ADAMS, it decided that the next meeting should be held at Paris.

Consequently number six of the final protocol was made to read as follows:

"The next Conference shall be held at Paris within from four to six years from the day when the convention goes into operation.

"The French Government shall fix the date thereof within these limits after consulting the international bureau."

His excellency Mr. DELFOSSE thought that it was well understood that such modifications as the Conference might thereafter introduce into the convention should, in order to be obligatory upon the countries of the Union, form the subject of conventions to be concluded in the same diplomatic form as that which was about to be signed, and to be submitted to the same ratifications as the latter.

The Conference declared that it shared this view.

On motion of the president, it was agreed that a report of the signing should be drawn up, which report should be signed and printed separately from the text of the convention, and in which should be contained the declarations relative to the accession of the colonies and to the classification of the contracting countries as regarded the quota of the expenses of the international bureau payable by each.

The Conference then verified the enumeration and designation of the contracting parties.

Thereupon Mr. WINCHESTER made the following declaration.*

Mr. KOENTZER, in his turn, stated that he was authorized to sign the convention, but that, not having been instructed in respect to the class in which the Republic of Liberia desired to be placed, he would make a reservation in regard to this point in the *procès-verbal* of signature.

Adjourned at one o'clock.

In the name of the Conference.

The President,

The Secretaries,

NUMA DROZ.

CHARLES SOLDAN.
BERNARD FREY.

REPORT OF THE SECOND SESSION OF THE CONFERENCE FOR THE PROTECTION OF LITERARY AND ARTISTIC WORKS.

SEPTEMBER 7, 1886.

Federal Councilor Numa Droz, the president, presiding.

Session opened at a quarter past five.

Present, the delegates present at the preceding session.

The Conference proceeded to compare the proof-drafts of the convention and its accompaniments, which were found to agree with what had been adopted.

In accordance with the resolution of the previous day, the PRESIDENT requested the delegates to be good enough to make the declarations which were to be inserted in the *procès-verbal* of signature.

* Mr. Winchester's declaration and President Droz's reply are published in Mr. Winchester's No. 81, page —, *supra*.

In respect to the adhesion to the convention of the colonies or foreign possessions of the contracting countries, his excellency Count DE LA ALMINA reserved to his Government the right to announce its decision at the date of the exchange of ratifications.

His excellency Mr. ARAGO declared that the adhesion of France carried with it that of all her colonies.

His excellency Sir F. ADAMS declared, in his turn, that the adhesion of Great Britain to the said convention included the United Kingdom of Great Britain and Ireland and all the colonies and foreign possessions of Her Britannic Majesty. But the English Government reserved the right of denouncing it at any time, in accordance with the method provided by article 20 of the convention, separately in behalf of one or more of the following colonies or possessions, namely: India, the Dominion of Canada, Newfoundland, the Cape, Natal, New South Wales, Victoria, Queensland, Tasmania, South Australia, West Australia, and New Zealand.

In respect to the classification of the countries of the Union as regards their contributory share in the expenses of the international bureau, the delegates stated that their respective countries were to be placed in the following classes, namely:

First class.—Germany, France, Great Britain, Italy.

Second class.—Spain.

Third class.—Belgium, Switzerland.

Fifth class.—Hayti.

Sixth class.—Tunis.

Mr. KOENTZER stated that the powers received from the Government of Liberia authorized him to sign the convention, but that he had not been instructed in regard to the class in which that country desired to be placed respecting its contributory share in the expenses of the international bureau. He, therefore, reserved on that point the decision of his Government, which would announce it at the date of the exchange of ratifications.

The draft of the *procès verbal* of signature proclaiming the above declarations was immediately approved.

The plenipotentiaries then submitted their respective full powers, which were found in good and due form.

Session adjourned at half-past six.

In the name of the Conference.

The President,

The Secretaries,

NUMA DROZ.

CHARLES SOLDAN.
BERNARD FREY.

REPORT OF THE THIRD SESSION OF THE CONFERENCE FOR THE PROTECTION OF THE LITERARY AND ARTISTIC WORKS.

SEPTEMBER 9, 1886.

Federal Councilor Numa Droz, the president, presiding.

Session opened at half-past eleven o'clock.

Present all the members.

At the PRESIDENT'S invitation the delegates proceeded to the signature of the convention, its accompaniments, and the *procès verbal* of signature, the text of which documents had been read and approved by the Conference at its preceding session.

The Spanish delegates having just received from their Government authority to adhere to the convention and its accompaniments in behalf of all the territories subject to the Spanish Crown, the Conference received this declaration and requested the Spanish delegates to be good enough to ask their Government to repeat it at the date of the exchange of ratifications.

The reports of the first and second sessions, having been submitted to the examination of the delegates, were read and approved; also, the present report.

The PRESIDENT made a short speech bidding farewell to the delegates, after which the session adjourned at half-past twelve.

In the name of the Conference.

The President,

The Secretaries,

NUMA DROZ.

CHARLES SOLDAN.
BERNARD FREY.

[Inclosure 3 in Mr. Winchester's No. 81.]

INTERNATIONAL COPYRIGHT ACT, 1886.

Arrangement of sections.

- Sec. 1. Short titles and construction.
- Sec. 2. Amendment as to extent and effect of order under international copyright acts.
- Sec. 3. Simultaneous publication.
- Sec. 4. Modification of certain provisions of international copyright acts.
- Sec. 5. Restriction on translation.
- Sec. 6. Application of act to existing works.
- Sec. 7. Evidence of foreign copyright.
- Sec. 8. Application of copyright acts to colonies.
- Sec. 9. Application of international copyright acts to colonies.
- Sec. 10. Making of orders in council.
- Sec. 11. Definitions.
- Sec. 12. Repeal of acts.

CHAPTER 33.—AN ACT to amend the law respecting international and colonial copyright. [25th June, 1886.]

Whereas, by the international copyright acts, Her Majesty is authorized by order in council to direct that as regards literary and artistic works first published in a foreign country, the author shall have copyright therein during the period specified in the order, not exceeding the period during which authors of the like works first published in the United Kingdom have copyright; and

Whereas, at an International Conference held at Berne, in the month of September, one thousand eight hundred and eighty-five, a draft of a convention was agreed to for giving to authors of literary and artistic works first published in one of the countries parties to the convention copyright in such works throughout the other countries parties to the convention; and

Whereas, without the authority of Parliament, such convention cannot be carried into effect in Her Majesty's dominions, and consequently Her Majesty cannot become a party thereto, and it is expedient to enable Her Majesty to accede to the convention:

Be it therefore enacted by the Queen's most excellent Majesty, by and with the advice and consent of the Lords spiritual and temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. (1) This act may be cited as the international copyright act, 1886.

(2) The acts specified in the first part of the first schedule to this act are in this act referred to and may be cited by the short titles in that schedule mentioned; and those acts, together with the enactment specified in the second part of the said schedule, are in this act collectively referred to as the international copyright acts.

The acts specified in the second schedule to this act may be cited by the short titles in that schedule mentioned, and those acts are in this act referred to and may be cited collectively as the copyright acts.

(3) This act and the international copyright acts shall be construed together, and may be cited together as the international copyright acts, 1844 to 1886.

2. The following provisions shall apply to an order in council under the international copyright acts:

(1) The order may extend to all the several foreign countries named or described therein.

(2) The order may exclude or limit the rights conferred by the international copyright acts in the case of authors who are not subjects or citizens of the foreign countries named or described in that or any other order, and if the order contains such limitation and the author of a literary or artistic work first produced in one of those foreign countries is not a British subject, nor a subject or citizen of any of the foreign countries so named or described, the publisher of such work, unless the order otherwise provides, shall, for the purpose of any legal proceedings in the United Kingdom for protecting any copyright in such work, be deemed to be entitled to such copyright as if he were the author, but this enactment shall not prejudice the rights of such author and publisher as between themselves.

(3) The international copyright acts, and an order made thereunder, shall not confer on any person any greater right or longer term of copyright in any work than that enjoyed in the foreign country in which such work was first produced.

3. (1) An order in council under the international copyright acts may provide for determining the country in which a literary or artistic work first produced simulta-

neously in two or more countries is to be deemed, for the purpose of copyright, to have been first produced, and for the purposes of this section "country" means the United Kingdom and a country to which an order under the said act applies.

(2) Where a work produced simultaneously in the United Kingdom and in some foreign country or countries is by virtue of an order in council under the international copyright acts deemed for the purpose of copyright to be first produced in one of the said foreign countries, and not in the United Kingdom, the copyright in the United Kingdom shall be such only as exists by virtue of production in the said foreign country, and shall not be such as would have been acquired if the work had been first produced in the United Kingdom.

4. (1) Where an order respecting any foreign country is made under the international copyright acts the provisions of those acts with respect to the registry and delivery of copies of works shall not apply to works produced in such country except so far as provided by the order.

(2) Before making an order in council under the international copyright acts in respect of any foreign country, Her Majesty in council shall be satisfied that that country has made such provisions (if any) as it appears to Her Majesty expedient to require for the protection of authors of works first produced in the United Kingdom.

5. (1) Where a work being a book or dramatic piece is first produced in a foreign country to which an order in council under the international copyright acts applies, the author or publisher, as the case may be, shall, unless otherwise directed by the order, have the same right of preventing the production in and importation into the United Kingdom of any translation not authorized by him of the said work as he has of preventing the production and importation of the original work.

(2) Provided that if after the expiration of ten years, or any other term prescribed by the order, next after the end of the year in which the work, or in the case of a book published in numbers, each number of the book, was first produced, an authorized translation in the English language of such work or number has not been produced, the said right to prevent the production in and importation into the United Kingdom of an unauthorized translation of such work shall cease.

(3) The law relating to copyright, including this act, shall apply to a lawfully produced translation of a work in like manner as if it were an original work.

(4) Such of the provisions of the international copyright act, 1852, relating to translations as are unrepealed by this act shall apply in like manner as if they were re-enacted in this section.

6. Where an order in council is made under the international copyright acts with respect to any foreign country, the author and publisher of any literary or artistic work, first produced before the date at which such order comes into operation, shall be entitled to the same rights and remedies as if the said acts and this act and the said order had applied to the said foreign country at the date of the said production: *Provided*, That where any person has, before the date of the publication of an order in council, lawfully produced any work in the United Kingdom, nothing in this section shall diminish or prejudice any rights or interests arising from or in connection with such production which are subsisting and valuable at the same date.

7. Where it necessary to prove the existence or proprietorship of the copyright of any work first produced in a foreign country to which an order in council under the international copyright acts applies, an extract from a register, or a certificate, or other document stating the existence of the copyright, or the person who is the proprietor of such copyright, or is for the purpose of any legal proceedings in the United Kingdom deemed to be entitled to such copyright, if authenticated by the official seal of the minister of state of the said foreign country, or by the official seal or the signature of a British diplomatic or consular officer acting in such country, shall be admissible as evidence of the facts named therein, and all courts shall take judicial notice of every such official seal and signature as is in this section mentioned, and shall admit in evidence, without proof, the documents authenticated by it.

8. (1) The copyright acts shall, subject to the provisions of this act, apply to a literary or artistic work first produced in a British possession in like manner as they apply to a work first produced in the United Kingdom:

Provided that—

(a) The enactments respecting the registry of the copyright in such work shall not apply if the law of such possession provides for the registration of such copyright; and

(b) Where such work is a book, the delivery to any persons or body of persons of a copy of any such work shall not be required.

(2) Where a register of copyright in books is kept under the authority of the government of a British possession, an extract from that register purporting to be certified as a true copy by the officer keeping it, and authenticated by the public seal of the British possession, or by the official seal or the signature of the governor of a British possession, or of a colonial secretary, or of some secretary or minister admin-

stering a department of the government of a British possession, shall be admissible in evidence of the contents of that register; and all courts shall take judicial notice of every such seal and signature, and shall admit in evidence, without further proof, all documents authenticated by it.

(3) Where before the passing of this act an act or ordinance has been passed in any British possession respecting copyright in any literary or artistic works, Her Majesty in council may make an order modifying the copyright acts and this act, so far as they apply to such British possession and to literary and artistic works first produced therein, in such manner as to Her Majesty in council seems expedient.

(4) Nothing in the copyright acts or this act shall prevent the passing in a British possession of any act or ordinance respecting the copyright within the limits of such possession of works first produced in that possession.

9. Where it appears to Her Majesty expedient that an order in council under the international copyright acts, made after the passing of this act, as respects any foreign country, should not apply to any British possession, it shall be lawful for Her Majesty, by the same or any other order in council, to declare that such order and the international copyright acts and this act shall not, and the same shall not, apply to such British possession, except so far as is necessary for preventing any prejudice to any rights acquired previously to the date of such order, and the expressions in the said acts relating to Her Majesty's dominions shall be construed accordingly; but, save as provided by such declaration, the said acts and this act shall apply to every British possession as if it were part of the United Kingdom.

10. (1) It shall be lawful for Her Majesty from time to time to make orders in council for the purposes of the international copyright acts and this act, for revoking or altering any order in council previously made in pursuance of the said acts or any of them.

(2) Any such order in council shall not affect prejudicially any rights acquired or accrued at the date of such order coming into operation, and shall provide for the protection of such rights.

11. In this act, unless the context otherwise requires—

The expression "literary and artistic work," means every book, print, lithograph, drawing, photograph, article of sculpture, dramatic piece, musical composition, painting, and other work of literature and art to which the copyright acts or the international copyright acts, as the case requires, extend.

The expression "author," means the author, inventor, designer, engraver, or maker of any literary or artistic work, and includes any person claiming through the author; and in the case of a posthumous work means the proprietor of the manuscript of such work and any person claiming through him; and in the case of an encyclopædia, review, magazine, periodical work, or work published in a series of books or parts, includes the proprietor, projector, publisher, or conductor.

The expressions "performed" and "performance" and similar words, include representation and similar words.

The expression "produced," means, as the case requires, published or made, or performed or represented, and the expression "production" is to be construed accordingly.

The expression "book published in numbers," includes any review, magazine, periodical work, work published in a series of books or parts, transactions of a society or body, and other books of which different volumes or parts are published at different times.

The expression "treaty," includes any convention or arrangement.

The expression "British possession," includes any part of Her Majesty's dominions exclusive of the United Kingdom; and where parts of such dominions are under both a central and a local legislature, all parts under one central legislature are for the purposes of this definition deemed to be one British possession.

12. The acts specified in the third schedule of this act are hereby repealed, as from the passing of this act to the extent in the third column of that schedule mentioned.

Provided as follows:

(a) Where an order in council has been made before the passing of this act under the said acts as respects any foreign country, the enactments hereby repealed shall continue in full force as respects that country until the said order is revoked.

(b) The said repeal and revocation shall not prejudice any rights acquired previously to such repeal or revocation, and such rights shall continue and may be enforced in like manner as if the said repeal or revocation had not been enacted or made.

FIRST SCHEDULE.—*International copyright acts.*

PART I.

Session and chapter.	Title.	Short title.
7 and 8 Vict., c. 12.....	An act to amend the law relating to international copyright.	The international copyright act, 1844.
15 and 16 Vict., c. 12....	An act to enable Her Majesty to carry into effect a convention with France on the subject of copyright, to extend and explain the international copyright acts, and to explain the acts relating to copyright in engravings.	The international copyright act, 1852.
33 and 39 Vict., c. 12....	An act to amend the law relating to international copyright.	The international copyright act, 1875.

PART II.

Session and chapter.	Title.	Enactment referred to.
25 and 26 Vict., c. 68....	An act for amending the law relating to copyright in works of the fine arts, and for repressing the commission of fraud in the production and sale of such works.	Section 12.

SECOND SCHEDULE.—*Copyright acts.*

Session and chapter.	Title.	Short title.
8 Geo. 2, c. 13	An act for the encouragement of the arts of designing, engraving, and etching historical and other prints by vesting the properties thereof in the inventors and engravers during the time therein mentioned.	The engraving copyright act, 1734.
7 Geo. 3, c. 38	An act to amend and render more effectual an act made in the eighth year of the reign of King George the Second, for encouragement of the arts of designing, engraving, and etching historical and other prints, and for vesting in and securing to Jane Hogarth, widow, the property in certain prints.	The engraving copyright act, 1766.
15 Geo. 3, c. 53.....	An act for enabling the two universities in England, the four universities in Scotland, and the several colleges of Eton, Westminster, and Winchester, to hold in perpetuity their copyright in books given or bequeathed to the said universities and colleges for the advancement of useful learning and other purposes of education; and for amending so much of an act of the eighth year of the reign of Queen Anne as relates to the delivery of books to the warehouse keeper of the Stationers' Company for the use of the several libraries therein mentioned.	The copyright act, 1775.
17 Geo. 3, c. 57.....	An act for more effectually securing the property of prints to inventors and engravers by enabling them to sue for and recover penalties in certain cases.	The prints copyright act, 1777.
54 Geo. 3, c. 56.....	An act to amend and render more effectual an act of his present Majesty for encouraging the art of making new models and casts of busts, and other things therein mentioned, and for giving further encouragement to such arts.	The sculpture copyright act, 1814.
3 Will. 4, c. 15.....	An act to amend the laws relating to dramatic literary property.	The dramatic copyright act, 1833.
5 and 6 Will. 4, c. 65...	An act for preventing the publication of lectures without consent.	The lectures copyright act, 1835.
6 and 7 Will. 4, c. 69...	An act to extend the protection of copyright in prints and engravings to Ireland.	The prints and engravings copyright act, 1836.
6 and 7 Will. 4, c. 110..	An act to repeal so much of an act of the fifty-fourth year of King George the Third, respecting copyrights, as requires the delivery of a copy of every published book to the libraries of Sion College, the four universities of Scotland, and of the King's Inns in Dublin.	The copyright act, 1836.

SECOND SCHEDULE.—*Copyright acts*—Continued.

Session and chapter.	Title.	Short title.
5 and 6 Vict., c. 45.....	An act to amend the law of copyright.....	The copyright act, 1842.
10 and 11 Vict., c. 95....	An act to amend the law relating to the protection in the colonies of works entitled to copyright in the United Kingdom.	The colonial copyright act, 1847.
25 and 26 Vict., c. 68...	An act for amending the law relating to copyright in works of fine arts, and for repressing the commission of frauds in the production and sale of such works.	The fine arts copyright act, 1862.

THIRD SCHEDULE.—*Acts repealed*.

Session and chapter.	Title.	Extent of repeal.
7 and 8 Vict., c. 12.....	An act to amend the law relating to international copyright.	Sections 14, 17, and 18.
15 and 16 Vict., c. 12...	An act to enable Her Majesty to carry into effect a convention with France on the subject of copyright, to extend and explain the international copyright acts, and to explain the acts relating to copyright engravings.	Sections 1 to 5, both inclusive, and sections 8 and 11.
25 and 26 Vict., c. 68....	An act for amending the law relating to copyright in works of the fine arts, and for repressing the commission of fraud in the production and sale of such works.	So much of section 12 as incorporates any enactment repealed by this act.

No. 6.

Mr. Bayard to Mr. Winchester.

No. 69.]

DEPARTMENT OF STATE,
Washington, October 25, 1886.

SIR: In your 81 of the 13th ultimo, you narrate the proceedings of the Conference of the 6th of September, 1886, for the protection of literary and artistic works, quote your declaration to that body of the position of this Government regarding the matter in question, and give the reply of the president of the Conference to your declaration.

Your declaration is approved. It appears to have been received in a manner entirely satisfactory to this Government, whose attitude in the premises is now fully understood.

The correspondence and papers relating to the subject subsequent to what has been communicated to Congress in Ex. Doc. 354, House of Representatives, Forty-ninth Congress, second session, will be laid before that body at its approaching session.

I am, sir, &c.,

T. F. BAYARD.

No. 7.

Colonel Frey to Mr. Bayard.

[Translation.]

WASHINGTON, October 25, 1886.

MR. SECRETARY OF STATE: The undersigned minister of the Swiss Confederation has the honor, in pursuance of the instructions of his Government, to transmit the inclosed note to you, and at the same time

to remark that the documents therein referred to have not yet come to hand, but that they will be sent to you as soon as they shall have been received.

The undersigned gladly avails himself of this occasion to assure you, Mr. Secretary of State, of his most distinguished consideration.

E. FREY.

[Inclosure in Colonel Frey's note of October 25.]

Mr. Droz to the Minister of Foreign Affairs of the United States of America.

Translation.

BERNE, October 12, 1886.

YOUR EXCELLENCY: Favorably considering the invitation which we addressed to you by our note of the 1st of July last, your excellency has pleased to send a representative to the International Conference which met at Berne on the 6th of September last for the purpose of transforming into a diplomatic instrument the draft of a convention which had been prepared by the International Conference of 1884 and 1885.

The twelve states that took part in the Conference were, together with Switzerland and the United States, Germany, Belgium, Spain, France, Great Britain, Hayti, Italy, Japan, Liberia, and Tunis. The text of the convention prepared by last year's Conference was definitively adopted, with a modification of mere form, and the convention was signed by all the delegates present except those of the United States and Japan, who had not received the necessary full powers from their Governments.

Several countries were prevented by some impediment in their laws from adhering at once to the convention; two of them expressed the confident hope that they should be able to adhere thereto before the expiration of the term fixed for the exchange of the ratifications, and we trust that, in a few years, the Union will number among its members all countries of any importance in point of literary and artistic activity.

We have the honor to send your excellency a certain number of copies of the proceedings of the Conference, including, in addition to the reports of the sessions, the texts adopted by the plenipotentiaries and submitted to the contracting states for ratification, to wit:

I. The convention concerning the establishment of an International Union for the protection of literary and artistic works.

II. Additional article to this convention.

III. Final protocol.

IV. Report concerning the signing.

The exchange of the ratifications is to take place at Berne within one year at the latest from the date of the signing of the convention, which instrument is to take effect three months afterwards.

The new international instrument which has just been concluded is a decided step in advance of the special conventions existing between the different states in relation to literary and artistic property; while it respects the legislative independence of the contracting countries, it unifies the most essential points of law, and subjects about five hundred millions of people to a common rule.

The sympathetic words uttered by Mr. Winchester at the Conference lead us to hope that when the pending questions concerning the rights of authors shall have been settled by the Congress, the United States will be able to join the contracting countries, and that they will occupy, in the International Union for the protection of literary and artistic property, the place which rightly belongs to a country that is distinguished by so active and enlightened intellectual activity.

We avail ourselves of this occasion to renew to your excellency the assurances of our high consideration.

In the name of the Swiss Federal Council.

For the President of the Confederation.

The Vice-President,

The Chancellor of the Confederation,

DROZ.

RINGIER.

No. 8.

Mr. Roustan to Mr. Bayard.

[Translation.]

LEGATION OF THE FRENCH REPUBLIC IN THE UNITED STATES,
Washington, November 29, 1886.

MR. SECRETARY OF STATE: The Conference which met at Berne in 1884 and 1885, with a view to the formation of an International Union for the protection of literary and artistic works, terminated its labors by the signing of a convention to which ten states adhered.

Mr. Winchester, the representative of the United States, who took part in the last Conference as well as in the two preceding ones, was not authorized to affix his signature to the final instrument; he made, however, important declarations before the Conference concerning the intention of the Federal Government to enter the Union which has just been formed; he expressly recognized the principles that underlie the protection of intellectual property, remarking, however, that the action of Congress is by the Constitution required in this matter, and that consequently the executive branch of the Government is prevented by existing laws from acceding to the new convention.

You are aware, Mr. Secretary of State, that American authors, who, by their numbers and talents, have gained a high rank in the intellectual world, receive the fullest protection in foreign countries, especially in France. I may add that, in another point of view, they could but be the gainers by the establishment of a *régime* that would compel publishers to recognize in the United States the rights of foreign authors. It is now an admitted fact that, so far from impairing the literary resources of a country, protection granted to foreign authors by preventing literary piracy and by placing obstacles in the way of the translation of their works, diminishes the competition of foreign productions, and accelerates the progress of the national literary and artistic movement.

In view of these considerations of equity and interest, and feeling confidence in the assurances given to the conference by Mr. Winchester, my Government has deemed itself authorized to make a request of the Federal Government.

I am therefore instructed, Mr. Secretary of State, now that Congress is about to resume its labors, to solicit in behalf of literary property in this country, the powerful support of the influence of the Chief Magistrate of the nation, requesting him to be pleased, in his annual message to advocate the accession of the United States to the Union in question.

I should be very grateful to you if you would be pleased to transmit this request to its high destination.

Accept, Mr. Secretary of State, the assurance, &c.,

TH. ROUSTAN.

No. 9.

Mr. Bayard to Mr. Roustan.

DEPARTMENT OF STATE,
Washington, December 1, 1886.

SIR: I have the honor to acknowledge your note of the 29th ultimo in reference to the co-operation of the United States in the acts of the Conference for the protection of literary and artistic works which met

at Berne in 1884 and 1885, and terminated its work by the convention of 1886.

I especially notice the flattering wish of your Government that the United States should join the other nations in the laudable objects of the Conference, and that to this end the President should, in his forthcoming annual message to Congress, pronounce himself in favor of such a course.

I have in response the pleasure to assure you that the well-known and favorable interest of the administration of the United States in this important international project continues, and will doubtless be reiterated on the reassembling of Congress.

Accept, &c.,

T. F. BAYARD.

RECOINAGE OF GOLD AND SILVER COINS.

LETTER

FROM

THE SECRETARY OF THE TREASURY.

TRANSMITTING A

Letter from the Treasurer, with inclosure, and submitting a deficiency estimate for recoinage of gold and silver coins, present fiscal year.

DECEMBER 16, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *December 15, 1886.*

SIR: I have the honor to transmit herewith, for the favorable consideration of Congress, copy of letter of the Treasurer of the United States of this date, with inclosure, in relation to an immediate appropriation of \$5,000 for the recoinage of silver coins now in the Treasury to complete the service of the current fiscal year, as follows:

For recoinage of gold and silver coins in the Treasury, to be expended under the direction of the Secretary of the Treasury, five thousand dollars, being a deficiency for the fiscal year 1887.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY OF THE UNITED STATES
Washington, December 15, 1886.

SIR: I have the honor to inclose herein copy of letter, dated 14th instant, addressed by me to the Hon. J. N. Burnes, requesting the insertion in the urgent deficiency bill of a provision appropriating \$5,000 for immediate use in the recoinage of silver coins now in the Treasury. Under the law this provision requires your recommendation, which I beg may be accorded and forwarded without delay to the committee, who are to act upon the matter to-day.

Very respectfully,

C. N. JORDAN,
Treasurer United States.

Hon. DANIEL MANNING,
Secretary of the Treasury.

TREASURY OF THE UNITED STATES,
Washington, December 14, 1886.

SIR: I have the honor to inclose herein a rough draft of a provision which I will be greatly obliged if you will cause to be presented to your committee with a view to be inserted in the urgent deficiency bill now under consideration.

The formal recommendation of this provision will be forwarded to you by mail from the honorable Secretary of the Treasury to-morrow.

Very respectfully,

C. N. JORDAN,
Treasurer United States.

Hon. J. N. BURNES,
Willard's Hotel, City.

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SILVER-CERTIFICATE PAPER.

LETTER

FROM

THE SECRETARY OF THE TREASURY.

TRANSMITTING

An estimate of an appropriation to supply deficiency in appropriation for paper for silver certificates, present fiscal year.

DECEMBER 16, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *December 15, 1886.*

SIR: I have the honor to inclose herewith copy of a letter addressed by the Chief of the Division of Loans and Currency, this office, on the 14th instant, to the chairman of the Subcommittee on Appropriations of the House, with reference to a deficiency appropriation of \$17,000, required to enable this Department to supply the necessary distinctive paper to fill the orders of the Treasurer of the United States for silver certificates during the present fiscal year.

I would state, for your information, that the Treasurer of the United States, with the Chief of the Division of Loans and Currency, this office, appeared yesterday, by appointment, before the Subcommittee on Appropriations (Hon. James N. Burnes, chairman., and explained the matter in detail. The necessity for this appropriation is apparent, and I hope it will be allowed.

Very respectfully,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES,
Washington, D. C.

TREASURY DEPARTMENT,
 OFFICE OF THE SECRETARY,
Washington, D. C., December 14, 1886.

SIR: The estimate of the Treasurer of the United States for silver certificates for the fiscal year 1887 was—

	Sheets.
For ones.....	4,500,000
For twos.....	2,500,000
For fives.....	1,500,000
For tens.....	100,000
Total.....	8,600,000

And with the percentage allowed for spoilage (5 per cent.), 9,030,000 sheets.

The appropriation for the present fiscal year was for 5,500,000 sheets, which would leave a deficiency of 3,530,000 sheets required to fill the orders of the Treasurer.

To supply this deficiency an appropriation of \$17,000 is desired. The balance of paper remaining on hand at this date will be exhausted by about the 1st of April next upon the basis of the capacity of the Bureau of Engraving and Printing, and unless an appropriation is made at an early day no silver certificates can be printed from about April 1 to August, 1887.

The Bureau of Engraving and Printing estimates that it can print 28,000 sheets of certificates per day; therefore, from April 1 to June 30, 1887, there could be printed 2,156,000 sheets; and while this would not fill the requisitions of the Treasurer, it would leave about 850,000 sheets available on the 1st of July to be used until paper can be manufactured under the regular appropriation for 1888.

The \$17,000 asked for, it is estimated, will furnish 3,000,000 sheets of paper.

The present orders for paper will be completed by the 15th of January next, when it is desirable that this appropriation be made available.

Very respectfully,

ROBT. L. MILLER,

Chief Division of Loans and Currency.

Hon. JAMES N. BURNES,

Chairman Subcommittee on Appropriations,

House of Representatives.

PITTSBURGH BRIDGE COMPANY'S ACCOUNT FOR IRON
PLATES FOR PENSION BUILDING.

LETTER

FROM

THE ACTING SECRETARY OF THE TREASURY,

TRANSMITTING

A letter from the Secretary of the Interior, with inclosures, submitting the account of the Pittsburgh Bridge Company for iron plates furnished for the Pension Office building.

DECEMBER 17, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
December 16, 1886.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of letter of the Secretary of the Interior of the 10th instant, and inclosures, submitting the account of the Pittsburg Bridge Company for iron plates added to roof-rafters of main hall of the fire-proof building for the Pension Office, not included in the original design, \$387.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 10, 1886.

SIR: I have the honor to transmit herewith an account of the Pittsburgh Bridge Company, amounting to \$387, with the recommendation that the same be forwarded to Congress with the request that it be included in the deficiency bill.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

WASHINGTON, D. C., *October 12, 1886.*

DEAR SIR: I return voucher No. 2573, which the Comptroller declines to allow.

Against the Comptroller's decision no disbursing officer can settle the bill. Congress or the Court of Claims alone have power to overrule a decision of a Comptroller of the Treasury upon any money account.

This voucher will be evidence of the opinion of the architect, and I think that at the next session of Congress, this winter, your representative will have no difficulty, on presenting your claim before the Committees on Appropriations of the House and Senate, in securing provision for payment of the bill in the sundry civil appropriation bill.

If Congress should fail to act, the Court of Claims would, I have no doubt, allow the claim, which I do not suppose would be seriously contested by the United States authorities.

I do not know on what grounds the Comptroller bases his adverse decision, and it is useless to speculate thereon.

The bill is a just one and should be paid, and I have no doubt will be paid in the end if prosecuted. I inclose with the voucher, which, being receipted by you, should be in your hands, a copy of the memorandum which I sent with it to the disbursing clerk of the Interior Department.

I am, very respectfully, your obedient servant,

M. C. MEIGS,

Supervising Engineer and Architect new Pension Building.

The PITTSBURGH BRIDGE COMPANY, *Pittsburgh, Pa.*

Note to the accompanying voucher in favor of the Pittsburgh Bridge Company, stated for \$387, certified October 6, 1886.

This voucher is for work done, under orders of the architect, to recover strength not quite up to the standard adopted in designing the roof of the Pension Building.

While the steel, substituted for iron, as allowed by contract and approved at the time, bore the tensile test prescribed in the contract, it was found, after partial construction of the roof-trusses, that its resistance to compressive stress was less than anticipated from the published data known to me at time of making contract; therefore, to restore the equilibrium between resistance and stress, with the factor of safety 4, it became necessary to remove some iron and add heavier plates to part of the frame.

This was done. It involved the use of 7,740 pounds more metal, which, at contract price, amounted to \$387.

At the time of final settlement of this contract, as then thought, no bill for this extra material and work had been presented. Subsequently it arrived, and after a careful discussion of the facts I am convinced that the amount of \$387 is equitably due the contractor as an extra. The work was needed, without consideration at the time whether it would be extra or no. It was necessary.

As it is not certain, however, that the accounting officers will take the same view of it as the architect, I advise that the voucher be submitted to them before actual payment. If rejected, that rejection would make difficulty in settlement of the accounts, and would require resort to Congress, which, having charged me with all responsibility for creating

this building, would, I have no doubt, take the necessary legislative steps to pay it.

October 6, 1886.

M. C. MEIGS,
Supervising Engineer and Architect.

OCTOBER 9, 1886.

Can't allow this bill; Congress must relieve.

M. J. DURHAM,
Comptroller.

(No. 2573.)

APPROPRIATION FOR COMPLETING THE FIRE-PROOF BUILDING FOR PENSION OFFICE

The United States to the Pittsburgh Bridge Company, Dr.

1886.

Sept. 29. For iron plates added to roof-rafters of the main hall of the fire-proof building for Pension Office, not included in the original design, 7,740 pounds, at 5 cents per pound..... \$387

OCTOBER 6, 1886.

I certify that the articles above enumerated have been received, or services rendered; that they were necessary for, and have been, or will be, applied to completing the fire-proof building for Pension Office; and that the prices paid were, in my opinion, just and reasonable, and that the purchases were made in open market or under contract, in compliance with section 3709, Revised Statutes.

M. C. MEIGS,
*Supervising Engineer and Architect,
Brevet Major-General, U. S. A.*

[Copy of decision of First Comptroller of the Treasury.]

OCTOBER 9, 1886.

Can't allow this bill; Congress must relieve.

M. J. DURHAM,
Comptroller.

○

ANNEX, ARMY MEDICAL MUSEUM AND LIBRARY.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A letter from the Surgeon-General recommending an amendment to the sundry civil appropriation bill making an appropriation for an annex to the Army Medical Museum and Library.

DECEMBER 17, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 16, 1886.

SIR: I have the honor to forward herewith copy of a communication from the Surgeon-General of the Army, calling attention to the omission from the sundry civil bill of the item for a brick annex to the "building for the Army Medical Museum and Library," for laboratory and anatomical purposes.

The necessity for the building was explained to me when considering the estimates of the Surgeon-General in October last, and I recommend that the item be inserted in the sundry civil bill before its passage by the House of Representatives.

Very respectfully,

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
Washington, D. C., December 15, 1886.

SIR: I have the honor respectfully to invite your attention to the omission in the sundry civil appropriation bill, lately reported to the House of Representatives, of the item, "building for Army Medical Museum and Library," providing for the erection of a "brick annex to main building for laboratory and anatomical purposes, \$7,500," page 171, Book of Estimates for fiscal year 1887-'88.

The necessity for this building is so great that I respectfully request that an amendment to the sundry civil bill providing for this item may be forwarded to the appropriation committee of the Senate, for its action, with your approval and recommendation.

Very respectfully, your obedient servant,

JNO. MOORE,
Surgeon-General, U. S. Army.

The SECRETARY OF WAR.

VERMONT'S INDEBTEDNESS FOR ARMS FURNISHED BY
THE GENERAL GOVERNMENT.

LETTER
FROM
THE ATTORNEY-GENERAL,
TRANSMITTING

A letter from the Secretary of War, with inclosures, relating to the alleged indebtedness of the State of Vermont for arms furnished by the Government in the years 1863 and 1864.

DECEMBER 17, 1886.—Referred to the Committee on the Judiciary and ordered to be printed.

DEPARTMENT OF JUSTICE,
Washington, December 16, 1886.

SIR: I have the honor to transmit herewith, for such action as Congress may deem proper, copies of letters addressed to me by the Secretary of War, and with them certain papers which accompanied them as inclosures, relating to the alleged indebtedness of the State of Vermont for arms and equipments furnished by the General Government during the years 1863 and 1864.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
Washington City, November 20, 1886.

SIR: I have the honor to acknowledge the receipt of your communication of the 11th instant, returning the papers inclosed to you in a letter from this Department of the 9th instant, relative to the indebtedness of the State of Vermont for arms and equipments furnished by the United States in 1863 and 1864.

In again submitting the papers to you, and in reply to your remark that it is not seen that any action is necessary on the part of your Department, as it does not fall within the authority or duties of the Attorney-General, I beg to state that the letter of the 9th instant was written by the Acting Secretary of War, after an interview had with him by

the Hon. J. B. Hoge, an ex-member of Congress from West Virginia, who represented himself as an agent for the authorities of the State of Vermont in the matter. Mr. Hoge informed the Acting Secretary of War that the letter of the Secretary of the Treasury to the Secretary of War of November 1, upon the subject, which was sent to you, was written in order that it might be transmitted to the Attorney-General, and it was stated by Mr. Hoge in this interview that the matter was fully understood either by the Attorney-General or Solicitor-General Jenks, and that after the papers had been transmitted by this Department to the Department of Justice it was the intention of the Department of Justice to communicate with the authorities of the State of Vermont upon the subject. It was also stated at this interview that the legislature of Vermont was now in session, but would probably adjourn in a very short time, and that the correspondence of the Department of Justice with the authorities of the State of Vermont would probably suggest the appointment of a committee by the State legislature with a view to the adjustment of this matter.

The above contains substantially all the information the Department possesses in the matter, and the action taken in sending the papers to you was to enable the Department of Justice to take such steps as it might desire to effect a settlement between the Government and the State of Vermont in regard to this indebtedness.

Very respectfully, your obedient servant,

WM. C. ENDICOTT,
Secretary of War.

The ATTORNEY-GENERAL.

WAR DEPARTMENT,
Washington City, November 9, 1886.

SIR: I have the honor to transmit herewith, for such action as may be necessary, a copy of a letter dated the 1st instant from the Secretary of the Treasury, inclosing copy of one of the 14th ultimo from the Third Auditor of the Treasury, in regard to the indebtedness of the State of Vermont for arms and equipments furnished by the General Government during the years 1863 and 1864; also a letter from Hon. Ebenezer J. Ormsbee, governor of Vermont, dated the 30th ultimo, and a transcript of the account of the State of Vermont with the War Department, referred to therein.

Very respectfully, your obedient servant,

S. V. BENÉT,
Brig. Gen., Chief of Ordnance, and Acting Secretary of War.

The ATTORNEY-GENERAL.

TREASURY DEPARTMENT,
November 1, 1886.

SIR: I have the honor to transmit herewith, for your information, copy of a communication received from the Third Auditor of the Treasury on the 14th ultimo, in regard to the indebtedness of the State of Vermont for arms and equipments furnished by the General Government during the years 1863 and 1864, together with a copy of a commu-

nication received from the governor of Vermont in reply to a reference of the matter to him on the 16th ultimo.

Respectfully, yours,

D. MANNING,
Secretary.

The SECRETARY OF WAR.

[First indorsement.]

ORDNANCE OFFICE,
Washington, November 8, 1886.

Respectfully returned to the Secretary of War, with a letter from the governor of Vermont (5610, '86) and a transcript of the account of the State of Vermont with this Department.

S. V. BENÉT,
Brig. Gen., Chief of Ordnance.

TREASURY DEPARTMENT, THIRD AUDITOR'S OFFICE,
Washington, D. C., October 14, 1886.

SIR: Under the act of Congress approved July 27, 1861, to indemnify the States for expenses incurred by them in defense of the United States, the State of Vermont filed her claims in this office at different times, amounting in the aggregate to \$924,735.26, of which \$857,845.10 has been audited and paid, leaving suspended a balance of \$66,890.16. The State is now asking for a settlement of this balance. Pending the examination of the accounts, I was informed that the records in the War Department would show a considerable indebtedness to the United States for arms and equipments furnished the State of Vermont during the years 1863 and 1864, which had never been returned or accounted for. Accordingly I made inquiry in the Ordnance Office of the War Department, where the fact was disclosed that in the years 1863 and 1864 the War Department furnished to Vermont arms and equipments of the money value of \$640,643.85.

In 1875 the State was credited with \$4,250, erroneously charged against the State's quota December 31, 1864. In 1877 there was a further credit of \$28,537.22, value of arms, accouterments, and ammunition lost, expended, issued, and burned between the years 1861 and 1865, credit therefor being given under the act of March 3, 1875. There is a further credit of \$64,076.40 for arms retained by the United States, to which the State of Vermont would be entitled under the act of April 23, 1808. The balance thus standing as an indebtedness against the State on the books of the Ordnance Office amounts to \$543,780.23.

On the 23d of June, 1866, Congress passed a joint resolution that the Secretary of the Treasury be authorized to pay the State of Vermont any sum that may be found due after the same shall have been audited by the proper officers of the Treasury Department, expended by the State of Vermont for the defense and protection of the frontier from invasion from Canada in 1864, not exceeding the sum of \$16,463.81, which, I am informed, had been previously ascertained as the full amount of her claim. Acting under this joint resolution, the Third Auditor allowed this sum of \$16,463.81, and the same was paid to the governor of the State out of the National Treasury.

It will be observed that this money was paid to the State of Vermont at the very time when this indebtedness was standing against her on the books of the War Department. In this connection I deem it proper to add that I have information, received from a creditable source, that the State sold the greater portion of these arms and equipments, out of which she realized about \$170,000, that was deposited in her treasury.

The legislature of Vermont is now in session, and I have therefore deemed it proper to give you this information at this time, in order that you may take such steps to bring the subject to the attention of the proper authorities of the State as you may be advised and as may seem to be required. In the mean time the claims of the State under the act of July 27, 1861, will be suspended in this office.

Very respectfully,

JNO. S. WILLIAMS,
Auditor.

Hon. DANIEL MANNING,
Secretary of the Treasury.

STATE OF VERMONT, EXECUTIVE CHAMBER,
Montpelier, October 30, 1886.

DEAR SIR: I desire a transcript of the account, itemized, of the United States with the State of Vermont, under the act of Congress of April 23, 1808, debt and credit. Will you have the kindness to send me such transcript?

I am, truly yours,

EBENEZER J. ORMSBEE,
Governor of Vermont.

Commence with January, 1861

To the OFFICER IN CHARGE OF ORDNANCE OFFICE, WAR DEPARTMENT,
Washington, D. C.

The State of Vermont, under the laws for arming the militia.

Dr.

Cr.

Mar. 16, 1861	210 rifle-muskets, caliber .58.	\$2, 968 00	Jan. 1, 1861	By balance due to the State	16 00
July 9, 1863	80 rifle-muskets, caliber .58.	1, 600 00	Jan. 1, 1862	By apportionment for arms for 1861	2, 964 00
	24 light cavalry sabers		Jan. 1, 1863	By apportionment for arms for 1862	2, 795 00
	24 saber belts and plates		Jan. 1, 1864	By apportionment for arms for 1863	2, 873 00
	24 sword knots		Jan. 1, 1865	By apportionment for arms for 1864	2, 769 65
June 29, 1864	80 sets of accouterments for rifle-muskets	538 72	Jan. 1, 1866	By apportionment for the year 1865	2, 769 61
	450 artillery sabers	2, 475 00	Jan. 1, 1867	By apportionment for the year 1866	2, 761 56
	450 belts and plates	715 50	Jan. 1, 1868	By apportionment for the year 1867	2, 761 56
Oct. 20, 1864	400 Enfield rifle-muskets	7, 200 00	Jan. 1, 1869	By apportionment for the year 1868	2, 761 56
	500 bayonet scabbards	225 00	Jan. 1, 1870	By apportionment for the year 1869	2, 737 68
	400 cartridge-boxes and plates, caliber .58	600 00	Jan. 1, 1871	By apportionment for the year 1870	2, 737 68
	500 cartridge-box belts and plates	570 00	Jan. 1, 1872	By apportionment for the year 1871	2, 737 68
	500 cap pouches	225 00	July 1, 1873	By apportionment for one-half year ending June 30, 1872	1, 368 84
	500 gun slings	225 00	July 1, 1874	By apportionment for year ending June 30, 1873	2, 737 68
	500 waist belts and plates	220 00	July 1, 1875	By apportionment for year ending June 30, 1874	2, 398 93
Oct. 27, 1864	80, 000 elongated ball-cartridges, caliber .57	1, 520 00	Apr. 19, 1875	By apportionment for year ending June 30, 1875	2, 398 93
	1, 000 Enfield rifle-muskets	18, 000 00		By 500 light cavalry sabers, at \$7	\$3, 500
	1, 000 bayonet scabbards	450 00		By 500 cavalry saber belts and plates, at \$1.50	750
	1, 000 cartridge-boxes and plates, caliber .58	1, 500 00			
	1, 000 cartridge-box belts and plates	1, 140 00	July 1, 1875	By apportionment for year ending June 30, 1876	4, 250 00
	1, 500 cap pouches	675 00	July 1, 1876	By apportionment for year ending June 30, 1877	2, 398 93
	1, 000 waist belts and plates	440 00	June 1, 1877	By value of arms, accouterments, and ammunition lost, expended, issued, or burned between the years 1861 and 1865, credit therefor being given under the act of March 3, 1875.	2, 398 93
Nov. 5, 1864	40, 000 elongated ball cartridges, caliber .57	760 00			28, 537 22
	600 Enfield rifle-muskets, caliber .577	10, 800 00			
	750 bayonet scabbards	337 50			
	600 cartridge-boxes and plates, caliber .58	900 00	July 1, 1877	By apportionment for year ending June 30, 1878	2, 398 93
	750 cartridge-box belts and plates	855 00	July 1, 1878	By apportionment for year ending June 30, 1879	2, 398 93
	750 waist belts and plates	330 00	July 1, 1879	By apportionment for year ending June 30, 1880	2, 398 93
	24, 000 elongated ball cartridges, caliber .58	456 00	July 1, 1880	By apportionment for year ending June 30, 1881	2, 398 93
Nov. 22, 1864	500 light cavalry sabers, n. p.	3, 375 00	July 1, 1881	By apportionment for year ending June 30, 1882	2, 398 93
	500 saber belts	750 00	July 1, 1882	By apportionment for year ending June 30, 1883	2, 398 93
Dec. 13, 1864	18 light 12-pounder guns, model 1857	9, 828 00	July 1, 1883	By apportionment for year ending June 30, 1884	1, 775 65
	6 light 12-pounder caissons	2, 040 00	July 1, 1884	By apportionment for year ending June 30, 1885	1, 775 65
	6 light 12-pounder carriages	1, 650 00	July 1, 1885	By apportionment for year ending June 30, 1886	1, 856 15
	3 traveling forges, with tools and stores, complete	1, 343 25	July 1, 1886	By apportionment for year ending June 30, 1887	1, 856 15
	2 battery wagons, with tools and stores, complete	1, 549 20		By balance	543, 780 23
	28 sets harness for 2 wheel-horses	1, 883 00			642, 611 85
	56 sets harness for 2 lead-horses	3, 150 00			
	600, 000 E. B. cartridges, caliber .574	9, 600 00			
	120, 000 Colt's cartridges, caliber .44	1, 800 00			
	15, 000 Springfield rifle-muskets, caliber .58	300, 000 00			
	Implements and equipments, complete, for 3 batteries of light 12-pounder guns.	996 30			
	2, 160 rounds light 12-pounder spherical case, fixed	3, 909 60			
	2, 160 rounds light 12-pounder canister, fixed	3, 067 20			
	12 light 12-pounder gun carriages	3, 300 00			
	1 battery wagon, "C," with tools and stores	774 60			

The State of Vermont, under the laws for arming the militia—Continued.

DR.

CR.

Dec. 13, 1864	14 sets harness for 2 wheel horses.....	941 50	
	28 sets harness for 2 lead horses	1,575 00	
	1,200 sets cavalry accouterments	6,720 00	
	15,000 sets infantry accouterments.....	78,750 00	
	12 light 12-pounder caissons.....	4,080 00	
	1,200 cavalry sabers.....	8,100 00	
	1,200 Remington carbines	27,600 00	
	1,200 sets horse equipments	45,420 00	
	1,200 Remington army pistols.....	14,400 00	
Dec. 31, 1864	120,000 Ballard's carbine cartridges	2,880 00	
	500 light cavalry sabers.....	3,500 00	
	500 saber belts and plates.....	750 00	
	500 Smith's carbines.....	11,750 00	
	500 carbine slings and swivels.....	1,050 00	
	500 carbine cartridge-boxes.....	600 00	
	500 Starr's army pistols.....	10,000 00	
	500 pistol holsters	400 00	
	500 cap-pouches and picks.....	225 00	
	500 waist belts and plates.....	220 00	
	500 sets horse equipments	16,905 00	
	50,000 Smith's carbine cartridges.....	1,250 00	
	50,000 Colt's army pistol cartridges.....	750 00	
	Error in apportionment, 1863 to 1869.....	3 48	
		<u>642,611 85</u>	
July 1, 1886	To balance	<u>543,780 23</u>	

O

ADDITIONAL FORCE, GENERAL LAND OFFICE.

LETTER

FROM

THE ACTING SECRETARY OF THE TREASURY,

TRANSMITTING,

With letters from the Secretary of the Interior, additional estimates for clerical force in the General Land Office.

DECEMBER 17, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT.

December 16, 1886.

SIR: I have the honor to forward herewith, for the consideration of Congress, copy of letter of the Secretary of the Interior of the 14th instant, submitting additional estimates by the Commissioner of the General Land Office for the clerical force of his office.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,

Washington, December 14, 1886.

SIR: I have the honor to transmit herewith a copy of a communication from the Commissioner of the General Land Office, dated the 10th instant, requesting that for the better administration of the business of his office provision be made in the appropriation bill for the current fiscal year for one additional chief of division, at an annual salary of \$2,000, for the division of the board of review, already organized, and that a new division, to be known as the contest division, be created, to be composed of one chief, at a salary of \$2,500, and six members, at \$2,000 each, and to recommend that the same be forwarded to Congress for appropriate action.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, D. C., December 10, 1886.

Hon. L. Q. C. LAMAR,
Secretary of the Interior :

SIR: With a view to the better administration of the business of this office, and to the end that it may receive that intelligent consideration which its importance to the persons directly interested, as well as the whole public, demands, I am constrained to make the following recommendations in addition to those contained in my annual report, to wit:

That provision be made in the appropriation bill for the current fiscal year for one additional chief of division, at an annual salary of \$2,000, for the division of the board of review already organized; that a new division be created, to be known as the "contest division," to be composed of one chief, at a salary of \$2,500, and six members, at a salary of \$2,000 each.

Upon the subject of the "board of review," in my annual report for 1886, I stated:

BOARD OF REVIEW.

On the 3d of December, 1885, the order of April 3, 1885, was modified as follows:

"The Commissioner will certify to and request the issue of patents upon all entries not subject to reasonable doubt, viz:

"First. In contests where the rights of successful parties have been established.

"Second. Where examinations have been made by Government agents and no fraud appears.

"Third. Homestead entries where residence, improvement, and cultivation have been made according to law.

"And a board, to consist of the assistant commissioner, chief clerk, and chief law clerk, is hereby organized to pass upon and report said cases to the Commissioner."

After the board, as above established, had been in operation four months, its usefulness and the necessity for its continuance became so apparent that on April 9, 1886, after the rescission of the order of April 3, 1885, its duties were increased so as to embrace the final examination of all entries before the issuance of patent.

Since the organization of this board over 30,000 entries of all kinds have been examined. The effect of the work of the board has been beneficial in causing greater care to be taken in the original examination of entries, as well as to establish uniformity of action in the application of the law and rules of practice, thus enabling the Commissioner to exercise a more intelligent judgment in ordering the issue of patents than when, in the absence of such supervisory action, cases were expected to be approved in a mere perfunctory manner.

I am now more than ever impressed with the necessity for such a board, and believe that it should constitute a division with a chief, whose whole time could be devoted to the subject. The legitimate duties of the assistant commissioner, the chief clerk, and the chief law clerk are so great as to require their whole attention, and renders it impossible for them to devote the necessary time to the business of the board without seriously neglecting their other pressing duties.

For this reason I have organized a new division, called the board of review, and I respectfully recommend that provision be made for compensation for a chief for said division.

The Pension Office has found it necessary to have two such boards, viz, a "board of review" and a "board of re-review," and I am quite sure the public interest will be subserved by having such a board in this office.

THE CONTEST DIVISION.

It must be manifest to every thinking person that as the time approaches, as it is now rapidly approaching, when the desirable public lands open to original settlement and entry will be exhausted, and the

land upon which settlements and filings have been made under the public-land laws become more valuable, contests between disputants over titles to such lands must greatly increase, until in the near future the contested cases will become, if not the largest, the most important branch of the work of the Land Office.

Under the present rules of practice adopted and promulgated by the Department, "contests may be initiated by an adverse party, or other person, against a party to an entry, filing, or other claim under laws of Congress relating to the public lands, for any sufficient cause affecting the legality or validity of the claim." This liberal rule governing appeals, together with the statute giving the successful contestant a preference right, for thirty days after notice of decision in the case, to enter the land, has also tended to increase the number of contests.

An examination of the contest and the quasi-contest dockets in the several divisions develops the fact that there has been in the past year a marked increase in the number of such cases filed. The large number of these cases remaining unacted upon at the end of the financial year is proof conclusive that the force now engaged upon this work, which is all that can be spared for it without seriously interfering with the other branches of the work of the office, is totally inadequate to keep it up, and unless relief is given must rapidly accumulate.

At the end of the fiscal year ending June 30, 1886, there remained unacted upon the following:

	Cases.
G division	85
F division	6,331
C division	6,128
N division	167
L division	50
D division	9
Total	12,770

It needs no argument to convince any one that these cases, involving the title to property of immense value, in some cases reaching millions, which come before the office to be considered upon the written evidence taken by the registers and receivers, should be examined, the evidence weighed, and opinions prepared by men who have had training as lawyers.

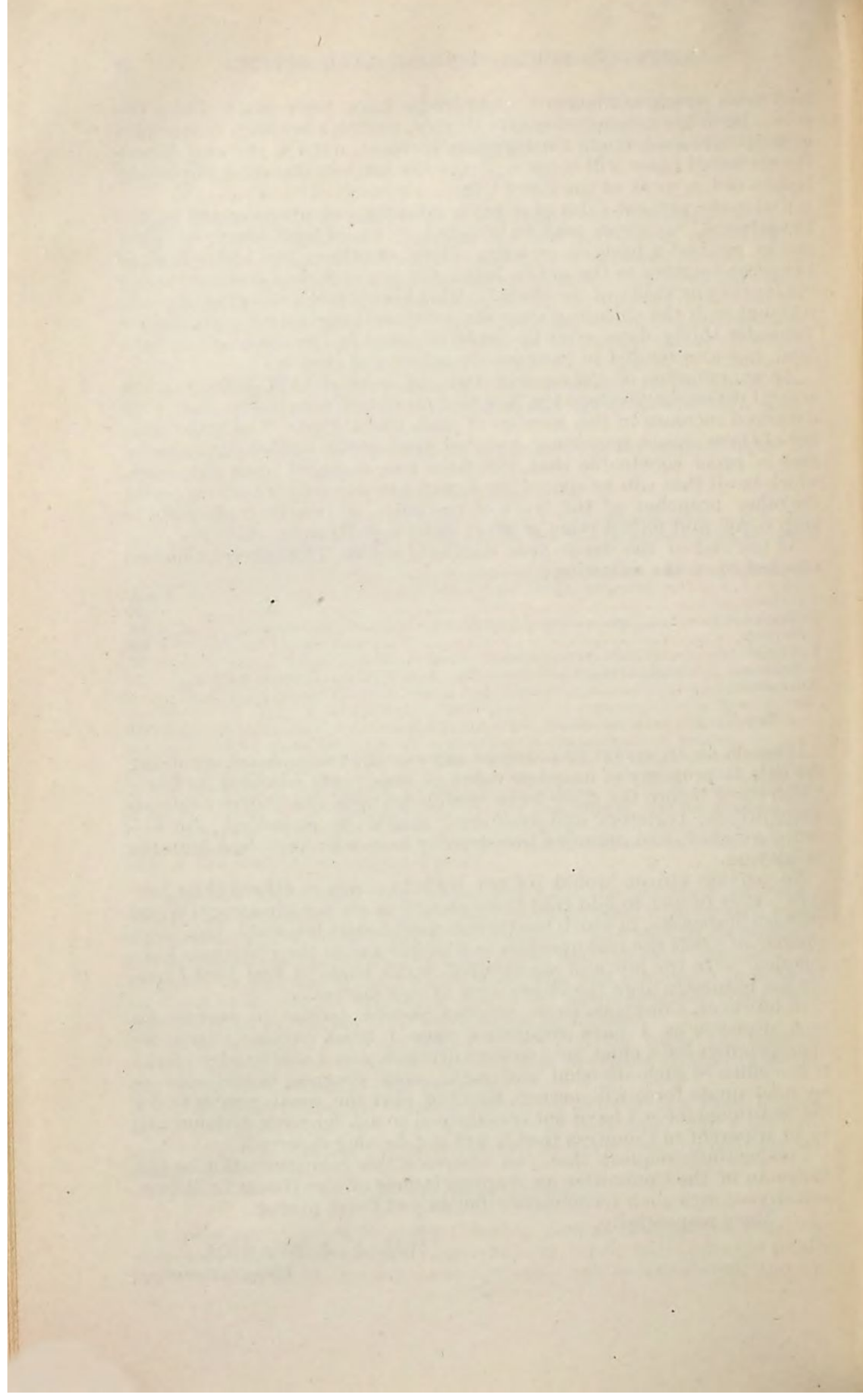
No private citizen would intrust such business to others than lawyers. It is proper to add that these questions are not always questions between claimants, in which the Government has no interest. In a large number of cases the real question is whether any of the claimants have complied with the law and are entitled to the land. I feel that I cannot too earnestly urge the importance of this matter.

If, however, Congress, in its wisdom, should decline to provide for such division as I have requested, then I must earnestly urge an appropriation for a chief for a contest division, and I shall assign clerks in the office to such division and make such progress in the work as my inadequate force will permit, trusting that the great necessity for the additional force I have felt constrained to ask for such division will be so apparent to Congress that it will not be long deferred.

I respectfully request that you transmit this communication to the chairman of the Committee on Appropriations of the House of Representatives, with such recommendation as you deem proper.

Very respectfully,

WM. A. J. SPARKS,
Commissioner.



DEFICIENCY ESTIMATES, SIGNAL SERVICE.

L E T T E R

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With a letter from the Secretary of War, deficiency estimates for the Signal Service for the fiscal year ending June 30, 1887.

DECEMBER 18, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *December 17, 1886.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of letter of the Secretary of War of the 16th instant, submitting estimates of deficiencies in the appropriations for the Signal Service, for the fiscal year ending June 30, 1887, as follows:

Pay	\$1,000 00
Transportation	1,000 00
Regular supplies	2,285 52
Barracks and quarters	3,110 16
Medical department	1,000 00
Observation and report of storms	23,770 25
Military-telegraph lines	5,000 00
Total	37,165 93

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
Washington City, December 16, 1886.

SIR: I have the honor to forward herewith, for transmission to Congress, estimates of deficiencies required by the Chief Signal Officer to complete the service of the present fiscal year, and I add that the Chief Signal Officer reports that the items therein, for mileage \$1,000, transportation \$1,000, and for telegraphing \$18,000, are required for im-

mediate use to carry on the absolutely necessary work of the Signal Service, which must stop if they are not immediately provided for.

Very respectfully,

WM. C. ENDICOTT,
Secretary of War.

The SECRETARY OF THE TREASURY.

DEFICIENCIES.

*Estimates of appropriations required for the service of the fiscal year ending June 30, 1887,
by the Chief Signal Officer of the Army.*

Detailed objects of expenditures, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1887.
WAR DEPARTMENT.			
SIGNAL SERVICE.			
<i>Signal Service—Pay:</i> For mileage to officers when traveling on duty under orders, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 247, sec. 1)		\$1, 000 00	\$225, 391 50
NOTE.—In the system of stations of this service, where the offices are in nearly every large city of the United States and at great distances from the central office, it becomes necessary to have such offices inspected by officers at least once each year for the comparison of instruments with standards. These inspections also result in correcting many evils which constantly grow up and imperil the efficiency of the service. The amount (\$4,000) appropriated for mileage for the present fiscal year is not sufficient to carry out the customary plan, as Congress cut down by \$1,000 the amount estimated and given for former years. The amount now asked is merely to enable the inspections to be completed according to the established plan and custom.			
<i>Signal Service—Transportation:</i> Transportation of men, including their baggage, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 248, sec. 1)		1, 000 00	21, 300 00
NOTE.—On account of decreased appropriations for this purpose for this year (by \$2,000) there is not remaining sufficient funds to transport the men of the Signal Service so as to give an efficient service. These men have to be discharged each five years, causing in every month journeys to a place where there is a military officer to re-enlist them, or, in case they do not re-enlist, then journeys of other men to take their places. Sickness and casualties require journeys, as well as every new enlistment at this office. The appropriation of last year was not sufficient for this service by \$1,000, and unless this is given the service will seriously suffer.			
<i>Observations and report of storms:</i> For telegraphing reports, messages, and other information in connection with the observation and report of storms, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 246 sec. 1)	\$18, 000 00		
NOTE.—For the fiscal year ending June 30, 1886, the sum of \$138,000 was appropriated, but for the fiscal year ending June 30, 1887, only \$120,000 was appropriated, which sum is not sufficient to properly and efficiently administer the telegraphic service. During the four months ending October 31, 1886, the sum of \$46,274.52 has been incurred for telegraphing reports, messages, and other information. This short appropriation arose by Congress adopting the expenditure of the first part of the preceding fiscal year as a basis, which was too small by \$18,000. Since the whole plan of cold-wave warnings and other useful and necessary work was adopted during the last half of same year this does not increase previous appropriations.			
For rent, hire of civilian employes, furniture, light, stationery, ice, repairs, rent of telephones, text-books, lumber.			

Estimates of appropriations required for the service of the fiscal year ending June 30, 1887, &c.—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1887.
WAR DEPARTMENT—Continued.			
SIGNAL SERVICE—continued.			
and other expenses of offices maintained as stations of observation in cities or places outside of Washington, D. C., being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 246, sec. 1)	\$5, 000 00		
NOTE.—The amount required is made up as follows:			
Civilian assistants and observers.....	\$2, 000		
Furniture	1, 000		
Heating supplies	500		
Stationery	500		
Lights	500		
Incidentals	500		
The amount estimated for the fiscal year ending June 30, 1887, was \$51,500; the amount, appropriated was \$35,000, which, with the utmost economy, will not be sufficient for the actual needs of the service. The furniture at nearly all the stations is worn and broken and entirely worthless, having been of a very cheap class when purchased, and in service at many places for the past ten years.			
For river and flood observations and expenses incidental thereto, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 246, sec. 1)	500 00		
NOTE.—The amount now on hand for these observations is \$5,579. Deducting the regular pay of observers (\$4,355.75), there will remain the sum of \$1,223.25 to pay for extra observations during the remainder of the fiscal year. The amount appropriated for the service of the fiscal year is \$1,000 less than was appropriated for the fiscal year ending June 30, 1886.			
For observations and expenses incidental thereto, announcing the probable approach and severity of frosts or rains for the benefit of the cotton region of the United States, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 247, sec. 1)	270 25		
NOTE.—Under this appropriation there remained on hand October 31, 1886, the sum of \$3,406.70; the estimated cost of this service for the remainder of this fiscal year will be \$3,676.95, leaving a deficiency of \$270.25.		\$23, 770 25	\$264, 350 00
<i>Maintenance and repair of military-telegraph lines:</i>			
For maintenance and repair of military-telegraph lines, including rent of offices, salaries of civilian operators and repairmen, lights, supplies, and general repairs, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stats. at L., p. 241, sec. 1)		5, 000 00	24, 000 00
NOTE.—This amount is for the purchase and laying of a new submarine cable across the mouth of the Columbia River. The present cable being part of the military telegraph line between Astoria, Oreg., and Fort Canby, Wash., failed on July 31, 1886, and is supposed to have been broken by a ship's anchor. Two attempts were made to recover and repair this cable, but being heavily sanded it could not be raised. The line is an important one to military, shipping, and meteorological interests, and should be re-established at the earliest possible date.			
<i>Signal Service—Regular supplies:</i>			
For fuel for various offices on the United States military telegraph lines and at stations of observation outside of Washington, D. C., and for sale of the regulation allowance to officers of the Signal Corps, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stats. at L., p. 247, sec. 1)	970 68		
NOTE.—The amount appropriated for the fiscal year ending June 30, 1887, was \$6,000; the amount of contracts made and to be made aggregates \$6,270.68; the amount of \$270.68 is therefore needed to supply stations to the close of the fiscal year. In addition the sum of \$700 is needed to reimburse officers for amounts paid by them for an allowance of which by law the Government should pay a proportionate part.			

Estimates of appropriations required for the service of the fiscal year ending June 30, 1887, &c.—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1887.
WAR DEPARTMENT—Continued.			
SIGNAL SERVICE—continued.			
For commutation of fuel for not exceeding four hundred and seventy men of the Signal Corps on duty at the office of the Chief Signal Officer and at signal stations throughout the United States, being for the service for the fiscal year ending June 30, 1887 (appropriated, 24 Stat. at L., p. 247, sec. 1) . .	\$1, 314 84	\$2, 285 52	\$54, 538 37
NOTE.—This estimate is for the difference between commutation of fuel at \$8 per month, and commutation of fuel at \$9 per month, due enlisted men of the Signal Corps, who have been paid at the rate of \$8 per month while serving at points where the rate as fixed by the honorable Secretary of War is \$9 per month.			
<i>Signal Service—Barracks and quarters:</i> For commutation of quarters to not exceeding four hundred and seventy enlisted men of the Signal Corps on duty at the office of the Chief Signal Officer and at signal stations throughout the United States, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stats. at L., p. 248, sec. 1)		3, 110 16	84, 009 17
NOTE.—This estimate is for the difference between commutation of quarters at \$10 per month and commutation of quarters at \$21 per month due enlisted men of the Signal Corps who have been paid at the rate of \$10 per month while serving at points where the rate as fixed by the honorable Secretary of War is \$21 per month.			
<i>Signal Service—Medical department:</i> For medical attendance and medicines for officers and enlisted men of the Signal Corps, being for the service of the fiscal year ending June 30, 1887 (appropriated, 24 Stats. at L., p. 248, sec. 1)		1, 000 00	2, 000 00
NOTE.—The amount disbursed from July 1, 1886, November to 1, 1886, was \$836.60. The amount disbursed from November 1, 1885, to June 30, 1886, was \$1,755.90. Total disbursed in twelve months, \$2,592.50, to which should be added probable cost of medicines furnished from Army dispensaries not included in the above, \$407.50. The amount appropriated for the fiscal year ending June 30, 1887, was \$2,000, showing a possible deficiency of \$1,000.			
Total Signal Service		37, 165 93	675, 589 04

MEMORANDUM TO ACCOMPANY THE ESTIMATES FOR DEFICIENCIES IN THE SIGNAL SERVICE.

The item for \$18,000 is urgently needed. As stated in the note, the amount appropriated for the fiscal year ending June 30, 1887, is \$120,000, being \$18,000 less than the estimate. The estimate was calculated upon the service in the past year, and unless the sum of \$18,000 is given the telegraphing of the reports at very many of the important stations will have to be discontinued. So far as the amount appropriated for telegraphing is concerned, that portion which comes from subsidized roads, and which is settled in the Treasury, is not included in this estimate. The amount covers simply the total cost of telegraphing for which this service pays, and that portion of the amount which is due to the telegraph companies on account of messages sent over subsidized roads.

The balance of the appropriation for mileage to officers is reduced to \$369.44. The estimate for the fiscal year ending June 30, 1887, was \$6,000, which Congress reduced to \$4,000, and unless the amount of \$1,000, for which estimate is submitted, is appropriated, the service will be very much embarrassed.

The \$1,000 estimated for transportation of men is caused by the fact that the estimate submitted was for \$8,875, which Congress cut down to \$6,000. Up to December

11, 1886, the actual amount expended for transportation of men was \$3,321.08. The amount needed for reimbursement for transportation issued at points outside of Washington and for sleeping-car fare is \$3,000. Expended since December 11, \$36.50. Balance on hand at that date, \$342.42. The relief of three men in Alaska cost \$250. The expense of sending General Miles the men he had in the Apache campaign, and to afterwards relieve them, the part that came from this year's appropriation was \$1,375, both of which can be called extraordinary expenditures.

The \$250 for Alaska was ordered last April, and came out of the current appropriation, as the request could not apply until March; and a balance was turned in last year.

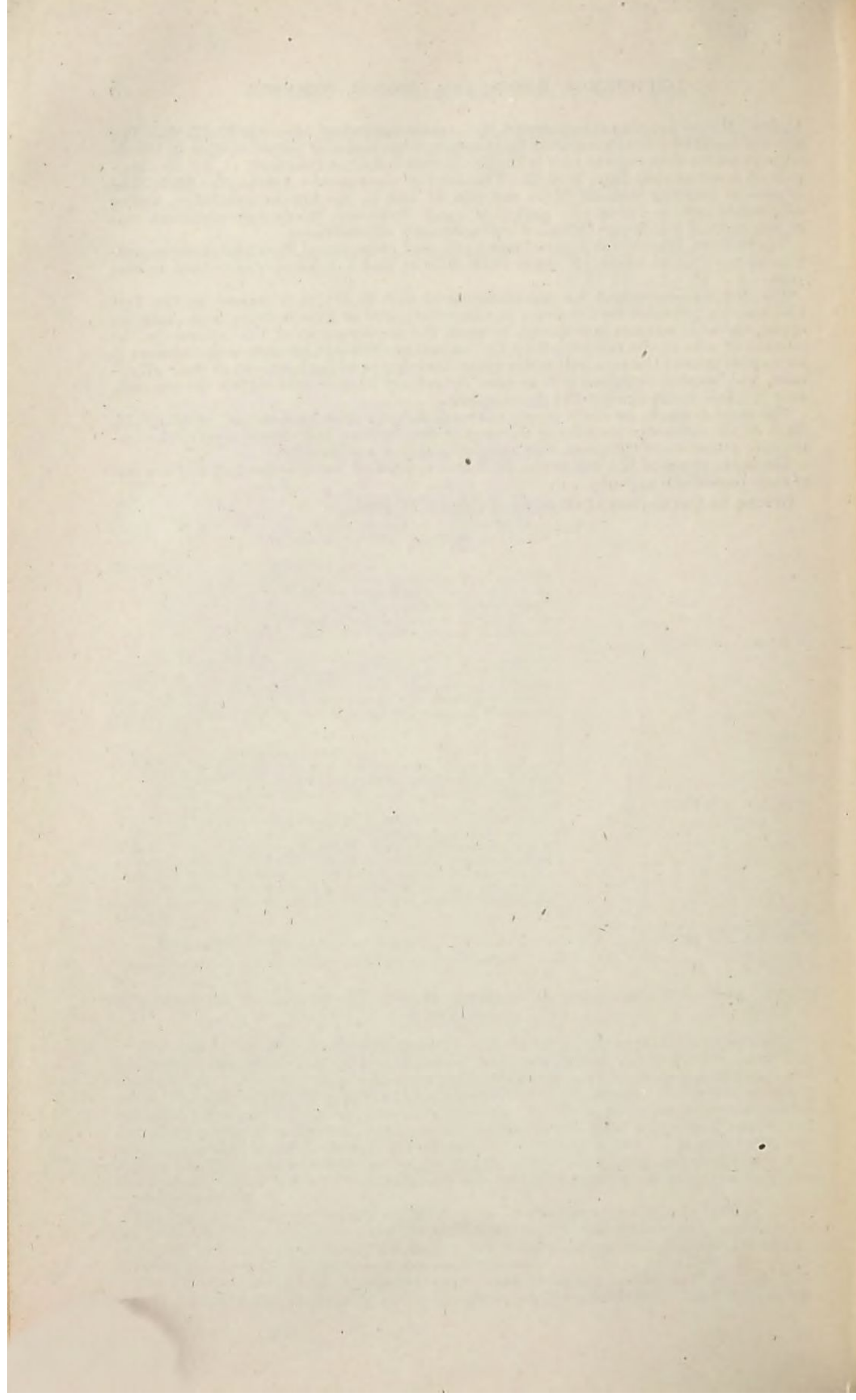
The deficiency required for commutation of fuel, \$1,314.84, is caused by the fact that the law provides for 470 men; the Secretary of War fixes the rate, and Congress appropriates an amount insufficient to meet the requirements of the service for the number of men at the rates fixed by the Secretary of War, and unless the amount is now appropriated the men will suffer great hardship in being deprived of their allowance, and besides, Congress will at some future day have to appropriate the amount, as it is a just claim against the Government.

The same remarks as above apply to the deficiency item for quarters of \$3,110.16. Each of the estimates mentioned are urgent deficiencies, and should receive the immediate attention of Congress, and appropriations made therefor.

The other items of the deficiency estimates submitted are also needed, but are not of such immediate urgency.

OFFICE OF CHIEF SIGNAL OFFICER, *December 16, 1886.*

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SAINTE MARIE RIVER RAILROAD BRIDGE.

LETTER

FROM

THE SECRETARY OF WAR.

TRANSMITTING,

With a letter from the Chief of Engineers, a report relating to the construction of a railroad bridge across the Sainte Marie River, and recommending an amendment to the act authorizing said bridge.

DECEMBER 18, 1886.—Referred to the Committee on Commerce and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 17, 1886.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 15th instant from the Chief of Engineers, and a copy of one of the 7th instant from Lieut. Col. O. M. Poe, Corps of Engineers, reporting that no "bridges, causeways, or other structures now erected or in process of erection" within the limits of the district under his charge "do or will interfere with free or safe navigation," but that the interests of commerce demand such a modification of section 3 of "An act to authorize the construction of a railroad bridge across the Sainte Marie River," approved July 8, 1882, as will require the draw in this bridge to be kept open, and only closed for the passage of trains.

A draft of an amendment intended to remove the objections to the above-mentioned act is transmitted herewith, and early legislation by Congress on the subject is recommended, as the erection of this bridge is about to be commenced.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 15, 1886.

SIR : The inclosed copy of a report from Lieut. Col. O. M. Poe, Corps of Engineers, made to this office to enable a compliance with the requirements of so much of section 4 of the River and Harbor act of

August 5, 1886, as requires a report of such bridges as are found to interfere with navigation, is respectfully submitted in advance of other reports in that connection on account of the suggestion therein made of the importance, in the interest of the increase of commerce through the Saint Mary's Falls Canal, of an amendment to the act of July 8, 1882, authorizing the construction of a railroad bridge across the Saint Mary's River.

The draft of an amendment intended to remove the objections to the above act is herewith submitted, and it is suggested that the attention of the House of Representatives be called to the necessity of early legislation on the subject, as the building of this bridge is about to be commenced.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WILLIAM C. ENDICOTT,
Secretary of War.

UNITED STATES ENGINEER OFFICE,
34 Congress Street West, Detroit, December 7, 1886.

SIR. Referring to section 4 of "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," approved August 5, 1886, and in accordance with directions conveyed by General Orders No. 7, Headquarters Corps of Engineers, November 30, 1886, I have the honor to report that no "bridges, causeways, or other structures now erected or in process of erection," within the limits of my district "do or will interfere with free and safe navigation."

In this connection, however, I deem it proper to refer to that provision of section 3 of "An act to *authorize* the construction of a railroad bridge across the Sainte Marie River," approved July 8, 1882, which permits the "draw-bridge over the ship-canal connecting Lakes Huron and Superior" (Saint Mary's Falls Canal), to remain closed, and to be opened for the passage of vessels.

At the time the act was passed the latest complete returns of the commerce of the canal were for the calendar year 1881, during which 1,567,741 tons of freight were passed through.

Meanwhile the increase of freight tonnage has exceeded all anticipation, until we have had through the canal for the season just closed an aggregate of 4,530,000 tons, or *three times* as much as in 1881, with every prospect that the increase will continue.

It needs no argument to show the necessity, right upon us, for such modification of the section in question as will require the draw-bridge to be kept open and only to be closed for the passage of trains.

It is now sure that the bridge will be constructed during the coming season, and the requisite legislation should be had as soon as possible.

It is not improbable that the bridge company, in its own interests, would take the course suggested, but the matter is too important to be left to the control of any authority short of law, and I consequently recommend, in the strongest possible terms, the legislation proposed and submit the draft of a bill to accomplish the purpose.

Very respectfully, your obedient servant,

O. M. POE,
Lieut. Col. of Engineers, Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

AN ACT to amend an act to authorize the construction of a railroad bridge across the Sainte Marie River, approved July 8, 1882.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That so much of section 3 of said act as is comprised in the following words and punctuation marks, to wit: “; and the said draw shall be opened promptly, upon reasonable signal, for the passage of boats and vessels, except when trains are passing over the same, but in no case shall unnecessary delay occur in opening said draw during or after the passage of trains;” be, and the same is hereby, repealed, and the following substituted, to wit:

During the season of navigation the draw shall habitually stand open, and may be closed for the passage of a train or trains only when they are in actual readiness to cross, and it shall be reopened immediately after said train or trains have passed it.

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INTERNATIONAL EXHIBITION, AUSTRALIA.

M E S S A G E

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

Report from the Secretary of State relating to the International Exhibition to be held at Adelaide, South Australia, in 1887.

DECEMBER 20, 1886.—Referred to the Committee on Foreign Affairs and ordered to be printed.

To the Senate and House of Representatives :

I transmit herewith a report from the Secretary of State, in relation to the invitation from her Britannic Majesty to this Government to participate in an International Exhibition which is to be held at Adelaide, South Australia, in 1887.

GROVER CLEVELAND.

EXECUTIVE MANSION,
December 20, 1886.

To the President :

I submit herewith a copy of a note to this Department from Sir Lionel West, her Britannic Majesty's minister at this capital, extending an invitation to this Government to participate in an International Exhibition which is to be held at Adelaide, South Australia, next year.

This Government took part in the International Exhibitions which were held some years ago at Melbourne and Sydney, respectively. Our manufacturers and inventors were numerous represented in those exhibitions, where their exhibits attracted much attention, whereby our commerce with Australia has been greatly benefited. As our participation in the proposed Adelaide International Exhibition would doubtless be equally beneficial to our commercial interests, I respectfully recommend that the accompanying papers be communicated to Congress with the suggestion that the same provision be made for the acceptance of the invitation and the appointment of an American commission as was done in the case of the Melbourne Exhibition.

Respectfully submitted.

T. F. BAYARD.

DEPARTMENT OF STATE,
December 17, 1886.

Sir L. West to Mr. Bayard.

WASHINGTON, *December 11, 1886.* (Received December 13.)

SIR: With reference to my note of the 1st ultimo, I am requested by the Earl of Iddesleigh to communicate to you the inclosed extract from the London Gazette of the 2d ultimo, notifying the appointment of a royal commission to promote the success of the International Exhibition to be held at Adelaide in 1887, and in communicating this document to the United States Government I am further requested to invite their participation in an international undertaking the furtherance of which, it is thought, may be of interest to the industries of the country.

I have, &c.

L. S. SACKVILLE WEST.

[Extract from the London Gazette of November 2, 1886.]

WHITEHALL, *October 30, 1886.*

The Queen has been pleased to issue a commission under Her Majesty's royal sign manual to the effect following :

VICTORIA R.

Victoria, by the Grace of God of the United Kingdom of Great Britain and Ireland Queen, Defender of the Faith, to—

Our dear Cousin and Councilor His Royal Highness George William Frederick Charles, Duke of Cambridge, Knight of our Most Noble Order of the Garter, Knight of our Most Ancient and Most Noble Order of the Thistle, Knight of our Most Illustrious Order of Saint Patrick, Knight Grand Cross of our Most Honorable Order of the Bath, Knight Grand Commander of our Most Exalted Order of the Star of India, Grand Master and Principal Knight Grand Cross of our Most Distinguished Order of Saint Michael and Saint George, Field Marshal commanding-in-chief our forces ;

Our right trusty and right entirely beloved Cousin William Drogo, Duke of Manchester, Knight of our Most Illustrious Order of Saint Patrick ;

Our right trusty and entirely beloved Cousin and Councilor George Augustus Constantine, Marquess of Normanby, Knight Grand Cross of our Most Honorable Order of the Bath, Knight Grand Cross of our Most Distinguished Order of Saint Michael and Saint George ;

Our right trusty and right well-beloved Cousin and Councilor Archibald Philip, Earl of Rosebery ;

Our right trusty and right well-beloved Cousin and Councilor Henry Howard Molyneux, Earl of Carnarvon ;

Our right trusty and right well-beloved Cousin Windham Thomas, Earl of Dunraven and Mount-Earl, Knight of our Most Illustrious Order of Saint Patrick ;

Our right trusty and right well-beloved Cousin and Councilor Granville George, Earl Granville, Knight of our Most Noble Order of the Garter ;

Our right trusty and well-beloved Cousin and Councilor Richard Assheton, Viscount Cross, Knight Grand Cross of our Most Honorable Order of the Bath, our Principal Secretary of State for India ;

Our right trusty and well-beloved Henry, Baron Thring, Knight Commander of our Most Honorable Order of the Bath ;

Our right trusty and well-beloved Councilor Edward Stanhope (commonly called the Hon. Edward Stanhope), our Principal Secretary of State for the Colonies ;

Our right trusty and well-beloved councilor Sir James Fergusson, Baronet, Knight Grand Commander of our Most Exalted Order of the Star of India, Knight Commander of our Most Distinguished Order of Saint Michael and Saint George, Companion of our Order of the Indian Empire, one of the under secretaries of state to our Principal Secretary of State for Foreign Affairs ;

Our right trusty and well-beloved Councilor Sir Henry Thurston Holland, Baronet, Knight Grand Cross of our Most Distinguished Order of Saint Michael and Saint George, vice-president of our Committee of Council on Education ;

Our right trusty and well-beloved councilor Sir John Rose, Baronet, Knight Grand Cross of our Most Distinguished Order of Saint Michael and Saint George ;

Our trusty and well-beloved Charles William Fremantle, esq. (commonly called the Hon. Charles William Fremantle), Companion of our Most Honorable Order of the Bath ;

Our trusty and well-beloved Sir Frederic Leighton, Baronet, President of the Royal Academy ;

Our trusty and well-beloved Sir Richard Owen, Knight Commander of our Most Honorable Order of the Bath.

Our trusty and well-beloved Sir Francis Philip Cunliffe-Owen, Knight Commander of our Most Honorable Order of the Bath, Knight Commander of our Most Distinguished Order of Saint Michael and Saint George, Companion of our Order of the Indian Empire ;

Our trusty and well-beloved Sir Joseph Dalton Hooker, Knight Commander of our Most Exalted Order of the Star of India, Companion of our Most Honorable Order of the Bath, Doctor of Medicine ;

Our trusty and well-beloved Sir John Gilbert, Knight ;

Our trusty and well-beloved Sir James Dromgale Linton, Knight ; and

Our trusty and well-beloved John Fretcheville Dykes Donnelly, esquire, Companion of our Most Honorable Order of the Bath, colonel on the retired list of our army ; greeting :

Whereas it has been notified to us, through our Secretary of State for the Colonies, that an International Exhibition is to be held in Adelaide, in our colony of South Australia, in the year one thousand eight hundred and eighty-seven ;

And whereas it is our wish that the manufacturing industry, agriculture, and fine arts of our United Kingdom of Great Britain and Ireland, and of our colonies and dependencies in Europe, Asia, Africa, and America, and in the remaining portions of Australasia, shall be fully and suitably represented at this exhibition :

Now know ye that we, considering the premises, and earnestly desiring to promote the success of the said exhibition, and reposing great trust and confidence in your fidelity, discretion, and integrity, have authorized and appointed, and by these presents do authorize and appoint, you, our said dear Cousin and Councilor George William Frederic Charles, Duke of Cambridge, together with you, the said William Drogo, Duke of Manchester ; George Augustus Constantine, Marquess of Normanby ; Archibald Philip, Earl of Rosebery ; Henry Howard Molynieux, Earl of Carnarvon ; Windham Thomas, Earl of Dunraven and Mount-Earl ; Granville George, Earl Granville ; Richard Assheton, Viscount Cross ; Henry, Baron Thring ; Edward Stanhope (commonly called the Hon. Edward Stanhope) ; Sir James Fergusson ; Sir Henry Thurstons Holland ; Sir John Rose ; Charles William Fremantle (commonly called the Hon. Charles William Fremantle) ; Sir Frederic Leighton ; Sir Richard Owen ; Sir Francis Philip Cunliffe-Owen ; Sir Joseph Dalton Hooker ; Sir John Gilbert ; Sir James Dromgale Linton, and John Fretcheville Dykes Donnelly to be our commissioners to obtain and distribute full information as to the best mode by which the products of the manufacturing and agricultural industry and the fine arts of our United Kingdom of Great Britain and Ireland, our colonies and dependencies, may be procured and forwarded for exhibition, to assist with their advice and co-operation, and generally to promote the success of the said exhibition in South Australia ;

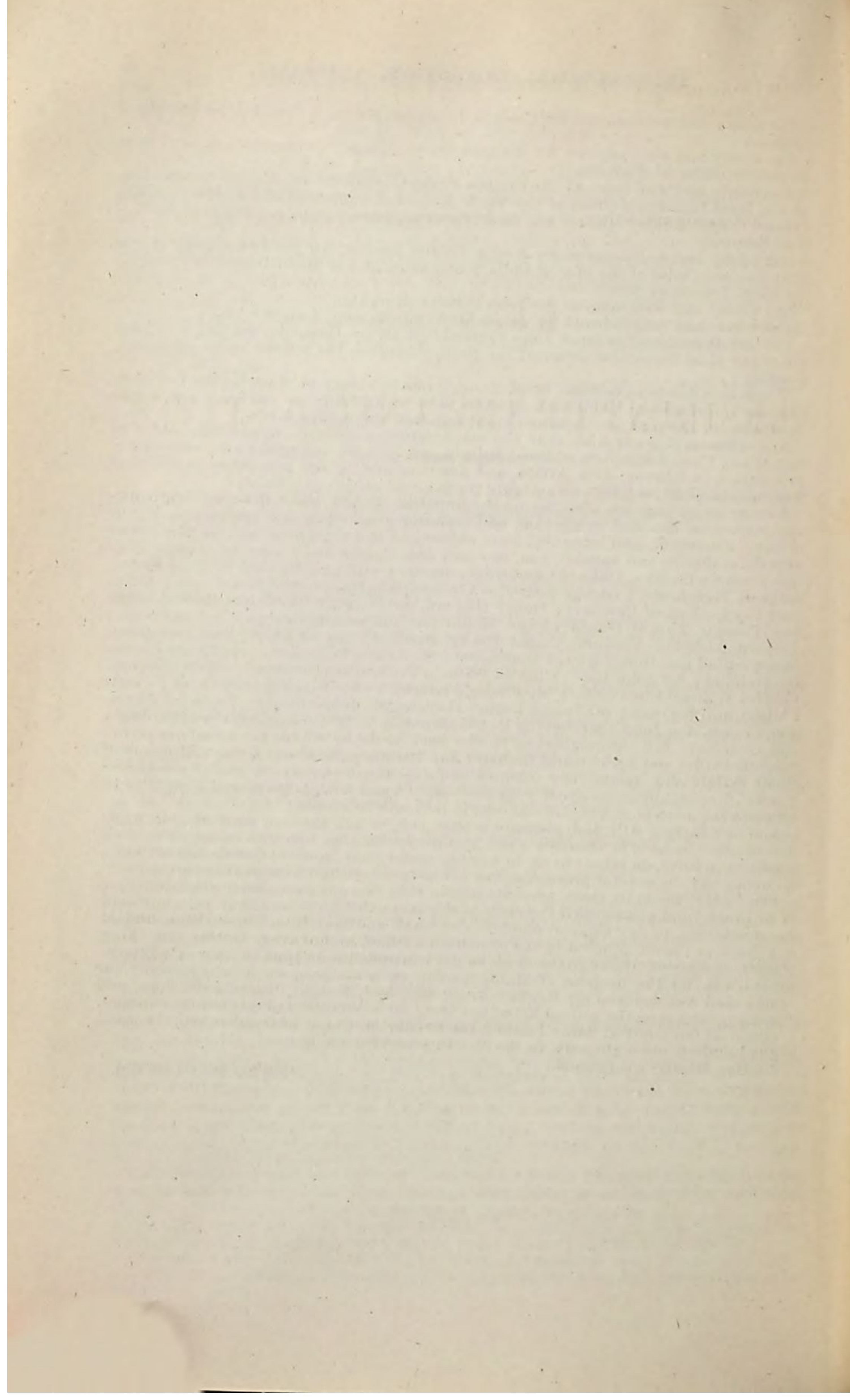
And our further will and pleasure is that you, or any three or more of you, when and so often as need or occasion shall require, so long as this our commission shall continue in force, do report to us, in writing under your hands and seals respectively, all and every the several proceedings of yourselves had by virtue of these presents ;

And lastly, we do by these presents ordain that this our commission shall continue in full force and virtue until the close of the said exhibition, and that you, our said commissioners, or any three or more of you, shall and may from time to time, and at any place or places, proceed in the execution thereof, and of every matter and thing therein contained, although the same be not continued from time to time by adjournment ; and for the purpose of aiding you in such matters, we hereby appoint our trusty and well-beloved Sir Herbert Bruce Sandford, Knight, lieutenant-colonel and honorary colonel on the retired list of our army, to be secretary to this our commission.

Given at our court at Saint James's, the twenty-ninth day of October, one thousand eight hundred and eighty-six, in the fiftieth year of our reign.

By Her Majesty's command.

HENRY MATTHEWS.



REFORM SCHOOL, DISTRICT OF COLUMBIA.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

[TRANSMITTING

A copy of a communication from the Attorney-General in relation to the insufficiency of the appropriation for family building and brick tank-house for the Reform School of the District of Columbia.

DECEMBER 21, 1886.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *December 20, 1886.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General, of the 16th instant, inclosing copy of letter of the president of the board of trustees of the Reform School of the District of Columbia, in relation to the insufficiency of the appropriations made by the act of August 4, 1886 (24 Stat., 252), for one family building and one brick tank-house for said school, and requesting that the further sum of \$8,408.70 be appropriated for the objects specified.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, December 16, 1886.

SIR: I send you, for transmittal to Congress, with a request that it be included in the estimates of appropriations for the next fiscal year, a copy of a letter of the 13th instant from the president of the board of trustees of the Reform School of the District of Columbia, as to the insufficiency of the appropriation for the current fiscal year for additional buildings at the school to pay for building the same, and requesting that an additional appropriation be made of the necessary amount for the same purpose.

I transmit also the printed proposals which accompanied the letter from the president of the board as inclosures.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

REFORM SCHOOL OF THE DISTRICT OF COLUMBIA,
Washington, December 13, 1886.

SIR: At its last session Congress included in its appropriation for sundry civil expenses of the Government for the year ending June 30, 1887, the following:

Reform School, District of Columbia: For one family building of brick and stone complete, to include steam heating apparatus, gas and water supply, \$15,000; for one brick tank-house, with wrought-iron tanks, with a capacity of not less than 35,000 gallons, \$4,500: in all \$19,500; one-half of said sum to be paid from the revenues of the District of Columbia.

The plans for the family building were carefully prepared, and approved by the Architect of the Capitol, Hon. Edward Clark, and by the Commissioners of the District. Under the direction of the latter the inspector of buildings, Mr. W. B. Entwistle, prepared detailed specifications, covering the building as designed, and upon these specifications and plans proposals were duly advertised for. The bids were opened on October 20 last, and only part of the many builders in the city responded to the advertisement—the lowest bid being that of James B. Halliday, of \$18,000.

Inasmuch as the lowest bid was \$3,000 over and above the amount of the appropriation, the board were unable to proceed further with the matter, and they respectfully invite your attention to the subject. The family building, as designed includes dormitory accommodations for sixty boys, school-room, and other necessary facilities and accommodations, including quarters for the teachers in charge, all to be heated by steam, and the plumbing to be done in accordance with the plumbing regulations of the District, which are very exacting, and to be fully approved by the inspector of plumbing before being accepted.

A smaller building will not fully meet the present needs of the school, and for this reason the board have refrained from having plans prepared for a smaller structure. The plan of heating proposed is the same that has been so successfully introduced in the public-school buildings of the city; and while the first cost is comparatively large, the subsequent cost of heating is much below that of any other method, while the protection against fire and loss of life therefrom is as near perfect as possible.

In the matter of the tank-house, plans and specifications for this work were prepared and approved in the same manner as those for the family building and proposals were duly advertised for.

The erection of the tank-house as planned has been found to be the only method of providing a constant supply of water and of averting the great danger to all the buildings and to their many occupants in the event of a fire. Walls of the specified thickness are necessary to sustain the weight of the two large iron tanks and their contents, and their height cannot be reduced without defeating the object of the structure.

The amount appropriated for this building and tanks was \$4,500, while the lowest bids therefor were as follows:

Notley Anderson, building.....	\$4,788
Bassher & Co., tanks.....	1,350
Total	6,138

As with the family building, the board were unable to proceed with the work; and they respectfully and earnestly urge that an appropriation be asked of Congress by you sufficient to enable the board to complete the structures, both of which are required.

The deposits received from the various bidders have been returned to them, and new bids for the work must be advertised for. Since these bids were submitted the price of material and labor has advanced in this city between 10 and 15 per cent., and to cover this the board asks that an appropriation be made. Taking the amounts of the lowest bids and adding thereto 15 per cent. of their total will give—

Proposal for family building.....	\$18,000 00
Proposals for tank-house and tanks.....	6,138 00
	24,138 00
Add 15 per cent	3,620 70
Add also cost of printing specification and of advertising for proposals, incurred and necessary to be incurred, say.....	150 00
	27,908 70
Amount appropriated in all.....	19,500 00
Leaving a deficiency of.....	8,408 70

The board of trustees instruct me to lay these facts before you, and to urge that the attention of Congress be called thereto, and that request be made for an appropriation of \$8,408.70, or so much thereof as may be necessary.

The grounds and buildings have been bought and erected from moneys furnished solely by the United States, the District of Columbia having since the opening of the school contributed only a portion of the expense of maintaining the institution. This is the first appropriation by Congress for its buildings or improvements thereof in which the grant has been conditioned that the District should pay half.

I inclose a copy of the specifications of both the family building and the tank-house.

In behalf of the board I beg to invite your early attention to the subject, and to ask your aid in the matter as far as possible.

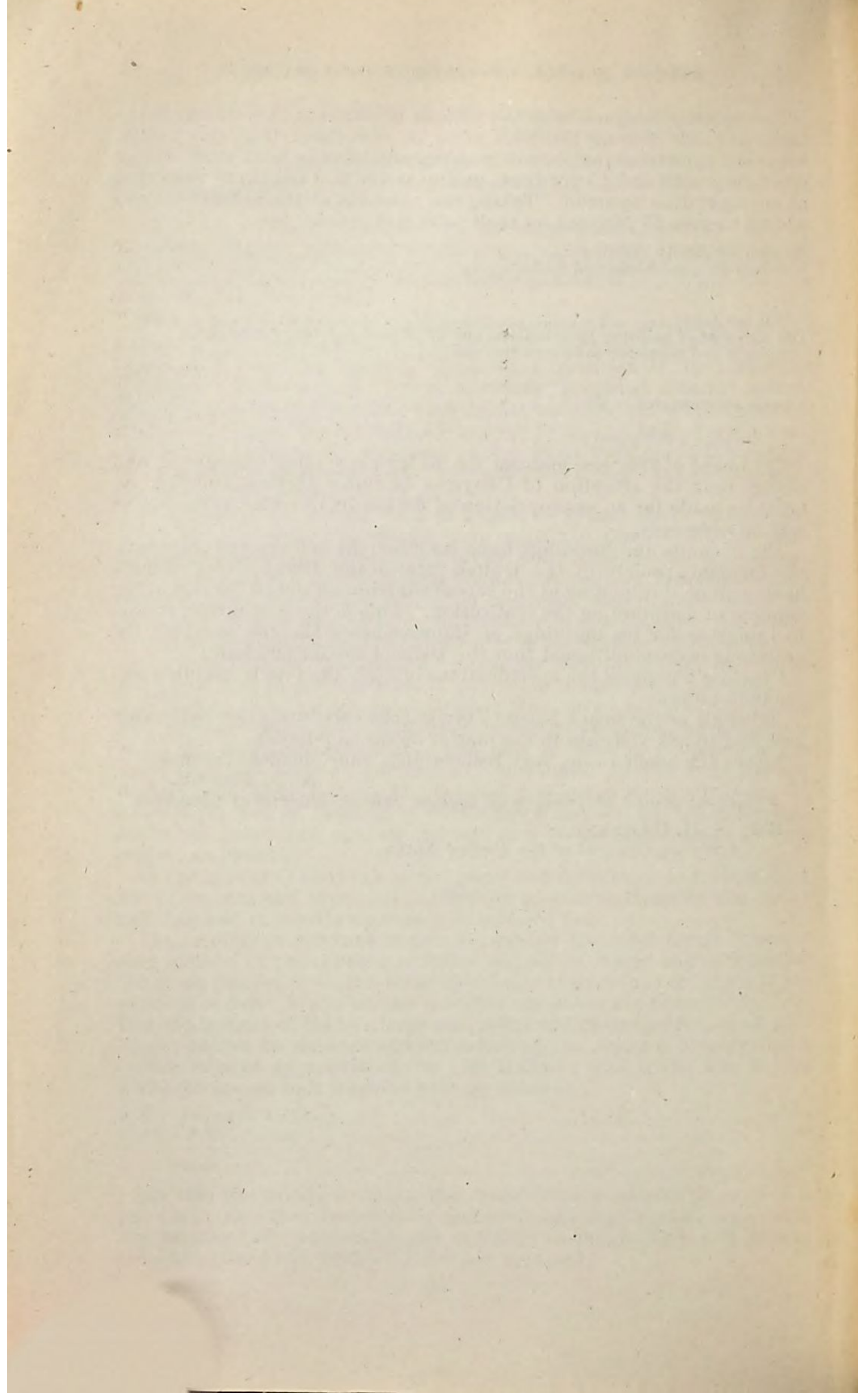
I have the honor to be, very respectfully, your obedient servant,

A. J. FALLS,

President Board of Trustees of Reform School, District of Columbia.

Hon. A. H. GARLAND,

Attorney-General of the United States.



CLAIMS ALLOWED BY ACCOUNTING OFFICERS OF THE
TREASURY DEPARTMENT.

L E T T E R

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

*Schedules of claims allowed by accounting officers under appropriations,
balances of which have been exhausted or carried to the surplus fund.*

DECEMBER 22, 1886.—Referred to the Committee on Appropriations and ordered to be
printed.

TREASURY DEPARTMENT,
December 21, 1886.

SIR: I have the honor to transmit herewith, in compliance with section 2 of the act of July 7, 1884 (23 Stat., p. 254), schedules of claims allowed by the several accounting officers of the Treasury Department under appropriations, the balances of which have been exhausted or carried to the surplus fund under the provisions of section 5 of the act of June 20, 1874 (18 Stat., p. 110), amounting to \$943,354.79.

Respectfully yours,

C. S. FAIRCHILD,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

H. EX. 20—46

Reported by the First Comptroller, under section 2, act July 7, 1884 (23 Stat., p. 254).

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
DEPARTMENT OF STATE.				
FOREIGN INTERCOURSE.				
¹ 121899	J. A. Campbell, late consul at Basle.....	Salaries, consular service, 1884 and prior years.	1879	\$110 65
² 120989	James Brown, late a seaman of American bark Nereid.	Relief and protection of American seamen, 1884 and prior years.	1884	24 90
³ 121909	Theodore Canisius, late consul at Apia..	do	1884	398 72
				423 62
⁴ 106790	Adam Badeau, late consul-general at Havana.	Contingent expenses, United States consulates, 1884 and prior years.	1884	88 94
⁵ 109146	J. A. Bingham, late minister to Japan....	Loss on bills of exchange, diplomatic service, 1884 and prior years.	1881	10 00
⁶ 121437	C. B. Trail, secretary of legation, Brazil..	do	1884	27 43
				37 43
(⁶)	William H. Emory, Brig. Gen'l U. S. A ..	Running and marking the boundary line between the United States and Mexico (act August 12, 1848).	.....	77 76
	Total Department of State, foreign intercourse.	.....		738 40
TREASURY DEPARTMENT.				
INTERNAL REVENUE.				
49363	D. A. de Lima & Co.....	Drawback on stills exported, as provided by section 10, act approved March 1, 1879 (20 Stat., 342).	1881	20 00
49364	Leaycraft & Co.....	do	1883	40 00
49365	Eggers & Heinlein.....	do	1881	20 00
49366	Godine & Mowatt.....	do	1881	20 00
49367	Frederick C. Knowles.....	do	1882, 1883	40 00
49368	Knopf & Co.....	do	1883	40 00
49369	J. Agostini.....	do	1884	40 00
49370	E. L. Beccerras, Nephew & Co	do	1884	20 00
49371	R. and C. Degener.....	do	1884	20 00
49372	C. M. Monsanto.....	do	1884	20 00
49373	R. Deeley & Co.....	do	1884	20 00
49374	S. Michelena.....	do	1884	40 00
49375	Fernandez and Castillo.....	do	1884	20 00
49376	F. C. Deckebach.....	do	1884	20 00
49377	E. B. Badger & Son	do	1882	40 00
49378	R. H. Allen.....	do	1885	20 00
49379	Sanders & Co.	do	1882, 1884	80 00
49380	C. F. Schramme.....	do	1885	20 00
49381	A. J. Tracy.....	do	1886	20 00
49382	Munoz and Espriella.....	do	1887	20 00
49383	Mattland, Phelps & Co.....	do	1881	40 00
49384	Wilson & Asmus.....	do	1881	20 00
49385	J. W. Wilson & Co.....	do	1884	40 00
49386	Watson & Farr.....	do	1884	20 00
49387	James D. Warner.....	do	1884	20 00
49388	H. A. Vatable & Son.....	do	1884	20 00
49389	Thebaud Bros.....	do	1884	60 00
49390	L. Toplitz & Co.....	do	1884	40 00
49391	J. A. Pauli.....	do	1884	20 00
49392	Whitmore & Co.....	do	1884	40 00
				900 00

¹ Balance due on account of salary.

² Balance of wages due him as seaman.

³ Balance due on account of relief furnished by consular agent at Jalnit.

⁴ Balance due on contingent account.

⁵ Balance due on account for loss on bills of exchange.

⁶ Balance standing to his credit on the books of the Treasury.

Reported by the First Comptroller, under section 2, act July 7, 1884, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
TREASURY DEPARTMENT—Cont'd.				
INTERNAL REVENUE—continued.				
49650	Sheats & McCurdy	Refunding taxes illegally collected prior to July 1, 1884.	1875	\$28 96
48971	Granville Smitha.....	do	1880	208 63
				237 59
48902	George L. Little	Refunding moneys erroneously received and covered into the Treasury prior to July 1, 1884.	1875	250 00
49322	Charles M. Horton.....	do	1874	25 00
49323	do	do	1875	25 00
49324	do	do	1875	25 00
				325 00
21215	Peter G. Morgan.....	Expenses of assessing and collecting internal revenue, 1875 and prior years.	1875	208 00
8454	Robert Little, late collector third district, Illinois.	Salaries and expenses of collectors of internal revenue, 1884 and prior years.	1867	229 37
121269	Mary F. Strong and Frank Strong, administrators of the estate of John B. Strong, late collector twenty-fourth district, New York.	do	1879	376 77
121270	do	do	1880	420 80
121271	do	do	1881	577 93
121272	do	do	1882	58 82
120991	J. M. Johnson, late collector twelfth district, New York.	do	1880	25 38
120992	do	do	1881	79 03
120993	do	do	1882	64 39
120994	do	do	1883	20 23
120995	do	do	1884	57
121250	H. M. Kutchin, late collector third district, Wisconsin.	do	1880	16 68
121251	do	do	1882	5 61
121252	do	do	1882	17 38
121253	do	do	1883	35 64
121254	do	do	1884	54 31
121256	C. A. Galloway, late collector third district, Wisconsin.	do	1881	27 59
120986	Henry M. Putney, late collector district of New Hampshire.	do	1882	36 58
120987	do	do	1883	186 02
120988	do	do	1884	172 04
121246	James Armstrong, late collector twenty-first district, New York.	do	1883	31 12
121247	do	do	1884	11 02
121248	do	do	1884	116 80
121413	James Chiverton, late acting collector twenty-fourth district, New York.	do	1882	19 43
				2,583 51
49454	H. C. Bartlett.....	Salaries and expenses of agents and subordinate officers of internal revenue, 1884 and prior years.	1869	30 00
49455	John A. Adams.....	do	1883	64 70
49456	Adron Anglin.....	do	1883	121 75
49253	A. Q. Keasbey.....	do	1884	105 00
				321 45
	Total internal revenue.....			4,575 55

¹ Commission on sales of tax paid spirit stamps allowed under the decision of the Supreme Court in the case of the United States v. William J. Landram, at the October term, 1885.

Reported by the First Comptroller under section 2, act July 7, 1884, &c.—Continued.

No. of certifi- cate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expendi- ture was incurred.	Amount.
TREASURY DEPARTMENT—Cont'd.				
MISCELLANEOUS.				
254174	Louisville and Nashville R. R. Co.	Propagation of food-fishes, 1884 and prior years.	1880	\$4 30
	Total Treasury Department.			4,579 85
DEPARTMENT OF THE INTERIOR.				
250764	D. T. Boynton, late pension agent.	Contingent expenses, De- partment of the Interior, 1884 and prior years.	1879	133 10
48972	Estate of James H. Murray, sr., deceased.	Expenses of the Eighth Census.	1860	128 45
46407	Kansas City, Fort Scott and Gulf R. R. Co.	Expenses of inspectors, General Land Office, 1884 and prior years.	1884	15 00
	Total Interior Department proper.			276 55
PUBLIC LANDS SERVICE.				
46980	Marquette, Houghton and Ontonagon R. R. Co.	Depredations on public timber, 1884 and prior years.	1884	1 10
46542	Wisconsin Central R. R. Co.	do	1884	49 40
46541	do	do	1883	38 80
46406	Kansas City, Fort Scott and Gulf R. R. Co.	do	1884	34 85
46405	do	do	1883	10 80
				184 95
46792	Robert C. May	Surveying the public lands, 1884 and prior years.	1884	100 00
35505	Thos. M. Pugh, receiver of public moneys, Fargo, Dak.	Reimbursement to re- ceivers of public moneys for excess of deposits.	1883	16 00
30576	do	do	1879	2 00
				18 00
46527	Chicago, Milwaukee and Saint Paul Rwy. Co.	Contingent expenses of land offices, 1884 and prior years.	1882	1 55
46534	Missouri Pacific Rwy. Co.	do	1883	76
39817	Zenas L. Wise, receiver, acting as dis- bursing agent, Dardanelle, Ark.	do	1884	1 90
39773	do	do	1883	7 50
37416	Jerome Knox, receiver, acting as dis- bursing agent, Lakeview, Oreg.	do	1884	31 25
38506	Tipton Lindsay, receiver, acting as dis- bursing agent, Visalia, Cal.	do	1884	35
				43 31
35150	George B. Folsom, receiver, acting as disbursing agent, Taylor's Falls, Minn.	Expenses of depositing public moneys, 1884 and prior years.	1883	60
39410	Wm. B. Mitchell, receiver, acting as dis- bursing agent, Saint Cloud, Minn.	do	1884	83 25
				83 85
38936	C. E. Chandler, receiver, acting as dis- bursing agent, Oberlin, Kans.	Salaries and commissions of registers and re- ceivers, 1884 and prior years.	1884	21 96
37415	Jerome Knox, receiver, acting as dis- bursing agent, Lakeview, Oreg.	do	1884	3 98
40013	M. H. Fitch, receiver, acting as disburs- ing agent, Pueblo, Colo.	do	1881	233 90
35711	W. H. C. Mitchell, receiver, acting as disbursing agent, Reed City, Mich.	do	1883	11 00
35213	James Dumars, receiver, acting as dis- bursing agent, Springfield, Mo.	do	1883	99
37113	G. H. Crumb, receiver, acting as disburs- ing agent, Ironton, Mo.	do	1884	17 18

Reported by the First Comptroller under section 2, act July 7, 1884, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
DEPARTMENT OF THE INTERIOR—Continued.				
PUBLIC LANDS SERVICE—continued.				
34497	James Dumars, receiver, acting as disbursing agent, Springfield, Mo.	Salaries and commissions of registers and receivers, 1884 and prior years.	1882	\$0 03
38483	H. R. Pease, receiver, acting as disbursing agent, Watertown, Dak.	do	1884	2,250 00
36334	Ellis Ballou, receiver, acting as disbursing agent, Helena, Mont.	do	1884	313 18
				<u>2,852 22</u>
239945	Central Pacific R. R. Co. (California and Oregon Division.)	Geological Survey, 1884 and prior years.	1881	6 00
239945	do	do	1882	9 75
239945	do	do	1883	48 50
239945	do	do	1884	17 00
240009	do	do	1884	6 10
241048	Central Pacific R. R. Co. (California Pacific Division).	do	1884	18 90
253239	Boston and Albany R. R. Co.	do	1884	12 25
256060	Eureka and Palisade R. R. Co.	do	1883	24 21
				<u>142 71</u>
	Total public lands service.....			<u>3,375 04</u>
	Total Department of the Interior.....			<u>3,651 59</u>
DEPARTMENT OF AGRICULTURE.				
239727	Central Pacific R. R. Co. (California and Oregon Division).	Data respecting the agricultural needs of the arid regions of the United States, 1882.	1882	<u>39 00</u>
DEPARTMENT OF JUSTICE.				
JUDICIAL.				
97758	J. G. Watts	Fees and expenses of marshals, United States courts, 1884 and prior years.	1884	94 70
100033	J. M. McClintock	do	1884	25 50
100205	James S. Rutan	do	1882	14 50
				<u>134 70</u>
96164	W. F. Poston	Fees of district attorneys United States courts, 1884 and prior years.	1884	<u>62 60</u>
96954	R. M. Jones	Fees of commissioners, United States courts, 1884 and prior years.	1884	3 75
97059	A. Q. Moore	do	1883	7 80
98249	Charles Martin	do	1884	2 00
98700	Asa Covell	do	1884	12 85
				<u>26 40</u>
98948	P. S. Penn <i>et al.</i>	Fees of witnesses, United States courts, 1884 and prior years.	1881	13 20
99833	J. V. Newhaus <i>et al.</i>	do	1882	85 60
				<u>98 80</u>
90446	Harrison Allen	Support of prisoners, United States courts, 1884 and prior years.	1884	139 95
93798	do	do	1884	118 25
99836	John C. Glover	do	1884	4 80
				<u>263 00</u>

Reported by the First Comptroller under section 2, act July 7, 1884, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
DEPARTMENT OF JUSTICE—Cont'd.				
JUDICIAL—continued.				
90940	Harrison Allen	Miscellaneous expenses, United States courts, 1884 and prior years.	1883	\$16 00
94178	Lot Wright	do	1883	77 50
97790	W. D. Brown & Co.	do	1884	16 00
97880	Thomas F. Terrell	do	1880-1883	45 00
98396	Julian M. Knight	do	1879-1884	165 00
				<u>319 50</u>
99097	Hans Johnson	Fees of jurors, United States courts, 1884 and prior years.	1883	80 20
97847	George W. Patton	Expenses of United States courts, 1879 and prior years.	1879	5 00
98204	Z. H. Kitchen	do	1879	39 00
				<u>44 00</u>
Total Department of Justice—judicial.				<u>1,029 20</u>

RECAPITULATION OF CLAIMS ALLOWED BY THE FIRST COMPTROLLER.

State Department—

Foreign intercourse, as follows:

Salaries, consular service, 1884 and prior years	\$110 65
Contingent expenses, United States consulates, 1884 and prior years	88 94
Relief and protection of American seamen, 1884 and prior years	423 62
Loss on bills of exchange, diplomatic service, 1884 and prior years	37 43
Running and marking the boundary line between the United States and Mexico (act August 12, 1848)	77 76
	<u>738 40</u>

Treasury Department—

Internal Revenue, as follows:

Salaries and expenses of collectors of internal revenue, 1884 and prior years	2,583 51
Salaries and expenses of agents and subordinate officers of internal revenue, 1884 and prior years	321 45
Expenses of assessing and collecting internal revenue, 1875 and prior years	208 00
Refunding moneys erroneously received and covered into the Treasury prior to July 1, 1884	325 00
Refunding taxes illegally collected, prior to July 1, 1884	237 59
Drawback on stills exported (act March 1, 1879)	900 00
	<u>4,575 55</u>

Miscellaneous —

Propagation of food-fishes, 1884 and prior years	4 30
	<u>4,579 85</u>

Interior Department—

Contingent expenses, Department of the Interior, 1884 and prior years	133 10
Expenses of inspectors, General Land Office, 1884 and prior years	15 00
Expenses of the Eighth Census	128 45
	<u>276 55</u>

Public lands service, as follows:

Salaries and commissions of registers and receivers, 1884 and prior years	2,852 22
Contingent expenses of land offices, 1884 and prior years	43 31
Expenses of depositing public moneys, 1884 and prior years	83 85
Depredations on public timber, 1884 and prior years	134 95
Surveying the public lands, 1884 and prior years	100 00
Geological Survey, 1884 and prior years	142 71
Reimbursement to receivers of public moneys for excess of deposits	18 00
	<u>3,375 04</u>
	<u>3,651 59</u>

Reported by the First Comptroller under section 2, act July 7, 1884, §c.—Continued.

RECAPITULATION OF CLAIMS ALLOWED BY THE FIRST COMPTROLLER—Continued.

Department of Agriculture—

Data respecting the agricultural needs of the arid regions of the United States, 1882... \$39 00

Department of Justice—

Judicial expenses, as follows:

Fees and expenses of marshals, United States courts, 1884 and prior years.....	134 70
Fees of district attorneys, United States courts, 1884 and prior years.....	62 60
Fees of commissioners, United States courts, 1884 and prior years.....	26 40
Fees of witnesses, United States courts, 1884 and prior years.....	98 80
Fees of jurors, United States courts, 1884 and prior years.....	80 20
Support of prisoners, United States courts, 1884 and prior years.....	263 00
Miscellaneous expenses, 1884 and prior years.....	319 50
Expenses of United States courts, 1879 and prior years.....	44 00

1,029 20

Total..... 10,038 04

Reported by the First Auditor and Commissioner of Customs, under section 2, act of July 7, 1884 (23 Stat., p. 254).

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
TREASURY DEPARTMENT.				
CLAIMS.				
196703	D. K. Zottman	Expenses of collecting the revenue from customs prior to July 1, 1884.	1876-1878	\$162 00
196703	W. H. Rond	do	1876-1881	1,233 00
196703	G. D. Sowles	do	1874-1876	549 66
196703	Cyrus B. Thompson	do	1876-1880	1,824 00
196703	N. H. Brown	do	1874-1880	3,252 56
196703	S. H. Wood	do	1879-1881	165 00
196703	Solomon Story, jr.	do	1876-1881	420 00
196703	L. L. Penniman	do	1876-1881	501 00
196703	A. S. Fleury	do	1879-1881	174 00
196703	Calice Limoge	do	1878-1881	1,569 37
196703	H. H. Rounds	do	1876-1881	969 00
196703	H. H. Dean	do	1876-1881	2,328 83
196703	E. M. Smith	do	1881	278 54
196703	W. W. Hoopes	do	1880-1881	537 47
196703	Charles O. Churchill	do	1876-1881	1,552 94
196703	A. A. Reed	do	1876-1877	120 00
196703	Jas. F. Milligan	do	1876-1878	237 20
196703	John L. Schuyler	do	1876-1877	652 25
196703	John W. Glennie	do	1875-1876	421 78
196703	Ezra Hazen	do	1874-1881	2,191 50
120552	John W. Robinson	do	1861	43 52
120599	George Gage	do	1881	9 03
197169	Charles Wells	do	1879-1881	84 00
197169	J. S. Spaulding	do	1876-1881	609 00
197169	Asa C. Palmer	do	1875-1877	191 50
197169	C. E. Laduke	do	1876-1881	477 00
197169	George L. Ewins	do	1876-1881	2,562 34
197169	H. T. Benedict	do	1874-1876	202 50
197169	J. H. Brooks	do	1874-1881	649 07
197169	C. M. Booth	do	1876-1881	417 00
197169	George E. West	do	1876	186 00
197169	C. D. Staples	do	1876	183 00
197169	Richard O'Neil	do	1876	57 00
197169	John A. Fitch	do	1874-1881	3,001 06
197169	John S. Bain, jr.	do	1874-1876	106 07
197169	George W. Brush	do	1874-1876	202 50
197169	Henry E. Bedell	do	1876-1881	547 84
197169	Thomas Warren	do	1876-1878	639 00
197169	F. M. Holden	do	1878-1881	800 25
197612	William H. Coe	do	1879-1880	462 82
197612	William H. Jefft	do	1876-1881	1,355 50

¹Additional compensation as inspectors of customs under decisions of Court of Claims, Nos. 14417 and 14418, (20 C. Cls. p. 115).

Reported by the First Auditor and Commissioner of Customs, &c.—Continued.

No. of certifi- cate or claim.	Name of claimant.	Approp riation from which payable.	Fiscal year in which the expend- ture was incurred.	Amount.
TREASURY DEPARTMENT—Cont'd.				
CLAIMS—continued.				
¹ 97612	William F. Keeler	Expenses of collecting the revenue from customs prior to July 1, 1884.	1876-1881	\$2, 108 45
¹ 97612	Harris T. Fitch	do	1874	14 64
¹ 97612	Philip H. Raiford	do	1876-1878	439 20
¹ 97612	Andrew Green	do	1881	239 23
¹ 97612	John A. McKay	do	1878-1879	609 24
¹ 97612	Nathan H. De Coster	do	1880-1881	727 41
¹ 97612	Matthew Hooper	do	1879-1881	621 30
¹ 97612	Thomas H. Starr	do	1876-1877	648 90
¹ 97612	Catherine Sweeney	do	1876-1881	2, 099 00
¹ 97612	Francis E. Witsell	do	1879-1880	1, 427 50
² 20905	Christopher Robinson	do	1864	21 77
² 20905	Urius N. Quidley	do	1861	21 77
¹ 97683	F. H. Koch	do	1876-1877	343 33
¹ 97683	George Dudley	do	1879-1881	863 49
¹ 97683	J. J. Whitehurst	do	1875-1876	261 52
¹ 97683	James Paine, jr.	do	1878-1881	2, 079 52
¹ 97683	Charles H. Coe	do	1880-1881	1, 082 05
¹ 97683	Otis Little	do	1876-1879	762 75
				<u>46, 297 17</u>
³ 19953	New York Steam Company	Heating apparatus for public buildings, 1886.	1886	<u>4, 692 00</u>
⁴ 20044	Albany City Water Works	Fuel, light, and water for public buildings, 1884 and prior years.	1884	<u>67 00</u>
⁵ 20741	Heinz & Berkele	Furniture, and repairs of same, for public build- ings, 1884 and prior years.	1884	<u>2 50</u>
⁶ 99104	W. A. Robinson, administrator of C. P. Murray.	Lighting and buoyage of Mississippi, Missouri, and Ohio Rivers, 1884 and prior years.	1883	<u>30 00</u>
⁷ 82782	Daniel Buckley	Salaries keepers of light- houses, 1884 and prior years.	1868-1871	<u>176 67</u>
⁸ 20843	William J. Smith	Relief of William J. Smith, late surveyor of customs, Memphis, Tenn.		<u>2, 004 99</u>
Total				<u>53, 270 33</u>

¹Additional compensation as inspectors of customs under decisions of Court of Claims, Nos. 14417 and 14418 (20 C. Cls., p. 115).

²Pay as revenue boatmen.

³Material and labor for making steam connection for court-house and post-office at New York. This claim was reported by letter July 7, 1886, but Congress failed to include it in the deficiency act of August 4, 1886.

⁴Water furnished post-office and court-house.

⁵Repairing locks, court-house and post-office, Atlanta, Ga.

⁶Pay of Murray as laborer at Buckner's light-station.

⁷Use of dwelling for Light-House Service.

⁸To reimburse William J. Smith under the private act of August 4, 1886 (24 Stat., 219), he having paid the amount of the defalcation into the Treasury of the United States.

RECAPITULATION OF CLAIMS ALLOWED BY THE FIRST AUDITOR AND COMMISSIONER OF CUSTOMS.

Heating apparatus for public buildings, 1886	\$4, 692 00
Fuel, lights, and water for public buildings, 1884 and prior years	67 00
Lighting and buoying Mississippi, Missouri, and Ohio Rivers, 1884 and prior years	30 00
Furniture and repairs of same for public buildings, 1884 and prior years	2 50
Expenses of collecting the revenue from customs prior to July 1, 1884	46, 297 17
Salaries keepers of light-houses, 1884 and prior years	176 67
Relief of William J. Smith, late surveyor of customs, Memphis, Tenn.	2, 004 99
	<u>53, 270 33</u>

Reported by the Second Auditor and Second Comptroller, under section 2, act of July 7, 1884
(23 Stat., 254).

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT.					
CLAIMS.					
23985	Archer, John, alias Samuel Blanchard.....		\$200 00		\$200 00
45454	Ashley, Amaziah		65 00		65 00
53930	Abbott, Robert S	\$68 06			68 06
56567	Abel, Platt D		100 00	\$100 00	200 00
56809	Andress, James F	204 05			204 05
58143	Adams, Benjamin F	12 00	100 00	100 00	212 00
58460	Admire, William P		100 00		100 00
58470	Adams, William D	37 52			37 52
58583	Ables, George W	12 40			12 40
58904	Allen, Isaac H	164 94			164 94
58975	Allen, Isaac	313 05			313 05
59083	Abernathy, Elsie	30 00	100 00	100 00	230 00
59160	Alphonse, Edward C		100 00		100 00
59288	Alston, York		290 00		290 00
59289	do		10 00		10 00
59290	Andrew, William		90 00		90 00
62191	do		10 00		10 00
59452	Adams, Lewis	24 66			24 66
59846	Agester, Solomon		100 00	100 00	200 00
59871	Aylsworth, Morris H			100 00	100 00
60427	Adams, William A	39 85			39 85
61898	Adams, William	254 74			254 74
61977	Armstrong, George D	97 77			97 77
62092	Arb, Samuel	70	40 00		40 70
62276	Ash, Reuben		100 00		100 00
62593	Aimes, Clement F. S	297 43			297 43
62790	Allen, Stephen W		100 00		100 00
65342	Allen, George. (See Sidney Constant.)				
63007	Adams, John H		200 00		200 00
63246	Allen, Dock	71 79	100 00		171 79
63247	do	10 00			10 00
63459	Armstrong, John H	8 49			8 49
63460	Anderson, Jacob R		33 33		33 33
63602	Atkinson, Alexander	3 55			3 55
63735	Avery, Sylvenus	176 56	33 34		209 90
63841	Asher, John	40 70	100 00		140 70
63842	do	10 00			10 00
63902	Argraves, George	31 55			31 55
63961	Alexander, William M	1,765 81			1,765 81
63968	Allman, John		100 00		100 00
64035	Ashmore, James M	76 80			76 80
64371	Anthony, Edward R		100 00		100 00
64381	Adams, James		100 00	50 00	150 00
64387	Austin, John	67 18	80 00		147 18
64419	Andrews, George L	191 87			191 87
64475	Allen, James A		100 00		100 00
64990	Arnold, Samuel	32 61	33 33		65 94
65336	Adams, Lewis G		75 00	100 00	175 00
66260	Altschuh, Philip	34 10			34 10
66353	Armor, Thomas		100 00		100 00
66364	Avery, Stephen		100 00		100 00
66429	Aker, Leonard	60 43			60 43
66894	Adams, George W	19 88			19 88
66919	Armour, Robert		100 00		100 00
67136	Arnold, George		100 00		100 00
67244	Allmendinger, Bernhard		100 00		100 00
67314	Anderson, Joseph		90 00		90 00
67315	do		10 00		10 00
67694	Aldrich, David		300 00		300 00
5785	Adkins, David	39 86	100 00		139 86
33427	Asbury, Jonathan		25 00		25 00
42407	Allen, Franklin		19 98	100 00	119 98
42408	do	4 98	5 02		10 00
63908	Armes, George A	25 98			25 98
66572	Auger, Marcel		50 00		50 00
23985	Blanchard, Samuel. (See John Archer.)				

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
77612	Beers, John	\$30 76	\$75 00		\$105 76
8711	Beile, August	3 83			3 83
16159	Brewer, William A. M.	341 64	340 00		681 64
16573	Boyce, William H.	299 35	100 00		399 35
35033	Bush, Henry	8 83		\$100 00	108 83
42986	Bortt, Frederick		100 00		100 00
43523	Braxton, Edward		90 00		90 00
56657	do		10 00		10 00
46339	Brooks, Spencer		225 00		225 00
48462	Bonine, John M.	65 43			65 43
49658	Bingham, William	6 50			6 50
52400	Baker, William A.	636 93			636 93
52462	Bowen, Henry	28 45			28 45
52475	Bruder, Charles F.	708 68			708 68
53007	Burket, Jacob	16 56			16 56
54088	Beecher, Albert R.	71 91	80 00		151 91
43891	Blake, James, sr.		100 00	50 00	150 00
56528	Bittinger, Charles L.	132 87			132 87
56801	Barnes, Joshua R.		75 75	50 00	125 75
56950	Bethel, Frederick W.		100 00		100 00
57260	Boydston, Nelson N.	35 25			35 25
57267	Bodine, Lewis T.	98 73			98 73
57270	Bradley, Daniel	97 17			97 17
57366	Badgett, Joseph H. P.		42 15	50 00	92 15
57368	Bradford, Hugh A.	63 28			63 28
57568	Bunch, Milton	180 00			180 00
57587	Brewer, Robert B.		25 00		25 00
57667	Brown, Joseph F.	41 58			41 58
57702	Brown, Randall	48 60	100 00		148 60
57703	do	10 00			10 00
57767	Bird, Frederick A.	80 85			80 85
57890	Billingsley, Samuel		100 00	50 00	150 00
57984	Baldwin, Jarvey		100 00	50 00	150 00
58147	Bartlett, Orlando S.	426 92			426 92
58148	Brant, Levi	55 80			55 80
58169	Burnett, James	471 92			471 92
58309	Beers, David	5 00			5 00
58357	Bicknell, George F.	214 30			214 30
58370	Boas, Edward		100 00		100 00
58376	Bracy, William H.	91 07			91 07
58377	do	7 50			7 50
58380	Brown, Philip	13 40	100 00		113 40
58381	do	10 00			10 00
58436	Byrne, Charles C.	147 06			147 06
58446	Bond, Henry	41 60	75 00	100 00	216 60
58461	Beck, Jerome E.	28 60			28 60
58464	Brown, John C.		100 00		100 00
58466	Bailey, Otis, jr.		75 00		75 00
58468	Berryman, Charles	21 70	50 00		71 70
58552	Boren, Alfred	94 30			94 30
58659	Burton, William H.	26 84			26 84
58663	Boal, Charles T.	222 05			222 05
58664	Bristol, Hiram W.	284 95			284 95
58666	Boyakin, Williamson F.	49 80			49 80
58712	Branson, David		25 00		25 00
58722	Brown, Alfred	130 90			130 90
58758	Buerkl, Lenderlin	15 16	100 00	100 00	215 16
58766	Baker, John W.	10 97		50 00	60 97
58787	Bailey, Thomas L.	9 53			9 53
58891	Bedtelyon, Jacob	120 88			120 88
58893	Breese, Jacob			100 00	100 00
58896	Brooks, Isaac N.	162 73			162 73
58897	Balch, James A.	374 99			374 99
58899	Burdick, Carpenter D.		113 77		113 77
58902	Bricks, Peter		33 33		33 33
58963	Brewer, George H.	194 63	100 00	50 00	344 63
58964	Bumgarer, Thomas D.	179 75	100 00	50 00	329 75
58987	Baringer, William	257 70			257 70

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
58988	Baker, Edward A	\$90 81			\$90 81
59081	Banks, Henry	67 17	\$100 00		167 17
59082	do	10 00			10 00
59087	Bray, John	115 59	100 00		215 59
59152	Bliss, Charles M	140 71	100 00		240 71
59230	Baltz, John D		100 00		100 00
59339	Burns, George W	21 27			21 27
59345	Beach, Benjamin	108 05			108 05
59351	Blanchett, Louis	112 05	90 00		202 05
59459	Bennett, Orson W	44 70			44 70
59467	Bacon, James W	266 28	50 00		316 28
59468	Buchanan, Arthur	13 75			13 75
59470	Bogue, Almos P			\$50 00	50 00
59484	Block, Henry		92 03		92 03
59485	do	3 53	7 97		11 50
59575	Briant, John	77 13	100 00	100 00	277 13
59585	Brown, Robert		93 14	50 00	143 14
59714	Brackett, James R	286 53			286 53
59781	Balcomb, Stephen		100 00	100 00	200 00
59784	Bishop, Frederick		100 00		100 00
59828	Bland, Josiah	55 90	33 33		89 23
59840	Baldwin, alias Thorp, Charles		68 77		68 77
59886	Bailey, George W	299 16			299 16
59896	Burnett, Reuben D		100 00	100 00	200 00
59908	Benjamin, William R	14 84			14 84
60009	Barnett, Valentine		75 00		75 00
60152	Broom, Adam	69 22	100 00		169 22
60153	do	11 00			11 00
60162	Brewer, Berry	151 87	100 00	100 00	351 87
60163	do	11 50			11 50
60222	Bruce, William H		100 00	100 00	200 00
60225	Barry, John		100 00		100 00
60231	Boyce, Carmi E		75 00		75 00
60236	Berringer, Christopher	49 24			49 24
60241	Blackburn, Francis	9 68	13 34		23 02
60263	Browning, Francis M		369 87		369 87
60415	Byran, David	26 63			26 63
60417	Britcil, Jerry	53 05			53 05
60471	Binnéy, Martin	25 36			25 36
60484	Bottoms, James		100 00	100 00	200 00
60550	Bly (or Blythe), Lewis	96 60	100 00	100 00	296 60
62651	do	10 00			10 00
60594	Black, Wyley	61 30			61 30
60597	Bonney, William	35 01	25 00		60 01
60598	Blackmar, George A		75 00		75 00
60604	Boyer, Jeremiah S		100 00		100 00
60610	Bales, Robert	25 83			25 83
60737	Brewer, Philo C		75 00	100 00	175 00
60778	Bushnell, Samuel B	60 24			60 24
60795	Briody, Richard H		100 00		100 00
60797	Benham, Napoleon B	223 88			223 88
60799	Brown, William A	35 73			35 73
60801	Bliss, James		100 00	50 00	150 00
60807	Bump, Ithamar		100 00		100 00
60885	Bryant, Joseph A	19 80			19 80
61346	Ballou, George W	34 98	50 00		84 98
61347	Barrows, Orin R	22 00			22 00
61855	Brooks, Felix		100 00	100 00	200 00
61865	Brown, George	4 55	25 00	50 00	79 55
61867	Blitsch, Henry		100 00	100 00	200 00
61908	Black, John C	26 93			26 93
61971	Burrier, David		75 00		75 00
61987	Broyles, Martin	64 90	66 67		131 57
61988	Becker, John	19 09			19 09
62102	Buckley, Nathan	6 50	240 00		246 50
62109	Bryant, Francis M	40 79			40 79
62189	Braden, James	23 57			23 57

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
62204	Bryant, Steven.....	\$5 20	\$300 00		\$305 20
62205	do.....	10 00			10 00
62266	Bond, Walter N.....	110 06			110 06
62423	Burton, Anthony.....		100 00		100 00
62427	Barnett, Joroyal.....		100 00		100 00
62508	Barker, Irvine E.....		100 00		100 00
62524	Bud, Green.....	203 73			203 73
62525	Bunn, John S.....	90 31	75 00		165 31
62526	Booth, George W.....	32 46	100 00		132 46
62529	Bull, John A.....		100 00	\$100 00	200 00
62607	Bassett, William J.....	45 20			45 20
62672	Barnes, James W.....	65 43	100 00		165 43
62681	Burns, John.....	18 55	75 00		93 55
62686	Barr, James.....	42 05			42 05
62689	Balcom, Lyman B.....	141 45	100 00		241 45
62692	Beer, Henry M.....		100 00		100 00
62704	Burdick, George R.....	102 26	55 00		157 26
62771	Blagg, James.....	20 20	100 00	50 00	170 20
62777	Beech, George.....		15 00		15 00
62789	Buckley, John F.....		100 00		100 00
62811	Bradshaw, Aaron W.....	14 30	100 00		114 30
62829	Barnes, George F.....	150 61			150 61
62835	Berkley, Josephus B.....	27 81	33 33		61 14
62837	Bailey, Albert P.....		190 00		190 00
62858	Burnham, James A.....	228 49			228 49
62861	Brandyberry, Jesse.....	13 44			13 44
62971	Beshore, Jacob W.....	577 54			577 54
62972	Bane, Moses M.....	161 50			161 50
62973	Baumann, John.....	32 61			32 61
62974	Black, James A.....	79 25			79 25
62992	Byrnes, James.....		100 00	100 00	200 00
63059	Bearnes, George W.....	131 25			131 25
63159	Barnes, Jeremiah.....	50 84			50 84
63162	Blakeman, David S.....			50 00	50 00
63165	Brion, Norman.....	14 88			14 88
63232	Branford, Beverly.....	14 84	300 00		314 84
63233	do.....	11 00			11 00
63271	Buchtel, Samuel.....		100 00		100 00
63296	Brodie, Paul.....		100 00		100 00
63298	Ball, William A.....		100 00		100 00
63300	Bloom, Thomas J.....	26 00	50 00		76 00
63330	Brenner, John W.....		100 00		100 00
63454	Blair, Frederick.....	12 68	25 00		37 68
63516	Bowers, Jonathan B.....	84 68	75 00		159 68
63571	Brewer, George.....	42 01	250 00		292 01
63572	Bush, Joseph.....	184 10	290 00		474 10
63579	Boyle, John G.....		86 88		86 88
63586	Briant, Charles C.....	25 22			25 22
63588	Boyer, Solomon.....	114 81			114 81
63589	Brooner, John P.....	104 39	80 00		184 39
63592	Bryant, Bruce A.....		25 00		25 00
63593	Brodrick, William P.....	107 49			107 49
63595	Bowman, Samuel.....	188 63			188 63
63652	Brooks, Ephraim.....		240 00		240 00
63656	Burkhart, John.....			48 86	48 86
63662	Burkett, Garland H.....		3 25		3 25
63665	Brooks, Francis M.....	2 60	35 00		37 60
63685	Brown, Jerry.....	13 87	50 00		63 87
63734	Blankenship, Henry.....			100 00	100 00
63747	Barkhite, Harmon S.....	46 86	240 00		286 86
63750	Boles, William E.....	29 45	75 00	50 00	154 45
63835	Brown, William.....		185 00		185 00
63836	do.....		10 00		10 00
63839	Bayne, Joseph.....		87 50	42 00	129 50
63840	do.....		12 50		12 50
63849	Battice, Julian.....	16 20	100 00	100 00	216 20
63852	Barber, William.....	42 03			42 03

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
63857	Babcock, Daniel J		\$85 00		\$85 00
63858	Blow, Peter E		25 00		25 00
63862	Burt, Charles W	\$163 17			163 17
63872	Brooks, James M	260 26	240 00		500 26
63896	Brown, Charles C	228 00			228 00
63915	Brewster, Lewis		100 00	\$50 00	150 00
63921	Bishop, John		100 00		100 00
63922	Ball, John		100 00		100 00
63923	Brickard, Jacob		100 00		100 00
63956	Blankenburg, John	28 00	100 00		128 00
63958	Brown, Edward B		300 00		300 00
64012	Braley, William J	47 19	75 00		122 19
64034	Bragg, Joseph	32 04			32 04
64075	Barnes, James	76 66			76 66
64077	Beauchamp, Thomas J	49 29	25 00		74 29
64079	Berry, Henry	54 89	15 00		69 89
64080	Besaw (or Beeson) Oliver	15 35	15 00		30 35
64082	Black, William	26 43			26 43
64100	Broszt, Lewis			50 00	50 00
74104	Blair, George N		100 00		100 00
64151	Brooks, Charles G		100 00		100 00
64162	Bateman, George D		100 00		100 00
64243	Battle, Red	75 91	100 00	98 25	274 16
64244	do	8 25		1 75	10 00
64250	Black, Henry C	66 28	100 00		166 28
64891	do	10 00			10 00
64263	Berry, John	26 00	25 00		51 00
64278	Breckenridge, Robert	14 79			14 79
64318	Buskill, Richard J	190 81			190 81
64382	Eridgford, William H	156 45			156 45
64385	Bush, William H			50 00	50 00
64416	Brewer, Peter		100 00	100 00	200 00
64427	Bell, Stephen D	9 72			9 72
64430	Bell, Henry	29 97	15 00		44 97
64436	Boles, Jesse		25 00		25 00
64442	Baker, Francis	9 07			9 07
64471	Buzzell, Samuel	52 70	25 00		77 70
64476	Baker, Nelson J		200 00		200 00
64574	Blake, John W		100 00		100 00
64575	Baumbach, Fred. von		100 00		100 00
64695	Beecher, Lina		100 00		100 00
64697	Buzzee, David H	49 61	15 00		64 61
64699	Butterfield, William H		200 00		200 00
64700	Burke, John	39 28	15 00		54 28
64708	Beckley, Edwin		100 00		100 00
64709	Baker, David	65 00			65 00
64710	Bolt, Clarence S	1 35			1 35
64717	Bender, William H		100 00		100 00
64931	Baldwin, Thomas J	12 32			12 32
64946	Bonham, Nathan L	586 45	75 00		661 45
65014	Burkhead, Elisha	149 28	100 00		249 28
65015	do	10 00			10 00
65062	Boaz, Aurelius	117 99	33 33		151 32
65063	Britton, Josiah	75 87	80 00		155 87
65112	Britton, Alexander H		113 83		113 83
65113	Brubaker, Noah		75 00		75 00
65121	Block, Otto M		100 00		100 00
65127	Brown, Henry, jr.,		100 00		100 00
65129	Brownell, Frank E		100 00		100 00
65132	Babbitt, George	35 69	25 00		60 69
65141	Bort, Jonathan G		100 00	100 00	200 00
65145	Burdick, Ira D	145 92			145 92
65147	Bly, John W		100 00		100 00
65331	Brownell, Benjamin J		75 00		75 00
65334	Brown, Meric S		25 00		25 00
65344	Brickley, Alfred	61 29			61 29
65657	Balyard, Frederick W	53 45			53 45

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
65689	Burton, Benjamin.....	\$13 03	\$300 00		\$313 03
65690	do.....	11 50			11 50
65717	Bristol, Bennet J.....	16 88			16 88
65732	Bacon, James W.....	116 67			116 67
65735	Bowlin, Wright.....	152 36			152 36
65738	Bunton, John J.....	155 34	25 00		180 34
65750	Burns, Alexander.....		100 00		100 00
65860	Bard, John P.....		100 00		100 00
65871	Brannum, Alexander.....	64 29	170 00		234 29
65958	Brice, James.....	352 98			352 98
65965	Bailey, Henry M.....	58 64			58 64
66057	Burchfield, Nathaniel.....	224 46	75 00	\$50 00	349 46
66055	Brady, Joseph.....	11 24		100 00	111 24
66056	Beeman, Corondo A.....	60 37			60 37
66069	Brown, William C.....		100 00		100 00
66229	Brown, George E.....		100 00		100 00
66259	Bedbury, George A.....		100 00		100 00
66347	Barnes, Oliver P.....		100 00		100 00
66365	Burke, Andrew.....		100 00		100 00
66367	Blair, John A.....		100 00	50 00	150 00
66371	Bowden, Jerry.....	182 59			182 59
66372	do.....	10 00			10 00
66415	Brittain, Stephen H.....		100 00		100 00
66684	Barnes, David.....	7 49	100 00	100 00	207 49
66685	do.....	10 00			10 00
66731	Bell, John H.....		100 00		100 00
66891	Burke, James C.....		100 00		100 00
66906	Barnes, George A.....		100 00		100 00
66920	Bennett, James A.....	90 43	75 00		165 43
66991	Beach, Alexander, jr.....		100 00		100 00
24236	Burdick, Alfred D.....	476 75			476 75
57228	Blunk, George W.....	143 57	75 00	50 00	268 57
58907	Buck, Burton.....	22 10	100 00	100 00	222 10
59259	Boyer, Wallis M.....	105 08			105 08
59584	Brown, Felix W.....	100 12	75 00	50 00	225 12
59813	Beach, Bryant D.....	146 84			146 84
63526	Bacon, Elbert.....	349 71	100 00	50 00	499 71
64021	Brown, Lorenzo.....		100 00		100 00
64279	Beecher, Alexander.....	104 08			104 08
65320	Bourdalowe, August.....		100 00		100 00
65660	Bergevin, Peter P.....		100 00		100 00
65724	Burns, Joseph.....	227 79			227 79
66269	Bishop, Lemuel D.....		160 00		160 00
66903	Blair, James H.....		100 00	100 00	200 00
67335	Bradley, Philander J.....	5 87	33 33		39 20
65946	Barden, James.....			90 00	90 00
65729	Box, Edmund.....	115 53	100 00	100 00	315 53
57544	Berry, Charles. (See Charles Carrico.)				
63302	Bowers, John. (See John L. Hubbell.)				
63887	Burke, James. (See Ambrose Newbert.)				
65961	Cath, Robert. (See Kath.)				
6620	Church, J. W.....	229 71			229 71
30891	Craven, William A.....	5 20			5 20
32738	Clark, Alexander.....	16 41			16 41
32742	Cooper, Julius.....	12 73			12 73
35725	Carnes, John.....	25 65			25 65
40838	Clark, Andrew B.....		100 00	100 00	200 00
48744	Creek, Little.....			100 00	100 00
49037	Coughlin, Michael.....		100 00		100 00
52313	Clays, William.....			100 00	100 00
52919	Cox, William J.....	5 85			5 85
52990	Charles, Thomas.....		100 00	50 00	150 00
55133	Carver, Joshua O.....	50 26			50 26
55463	Cox, Charles, jr.....	15 90			15 90
56527	Cochran, Thomas J.....	97 78			97 78
57265	Coons, John W.....	23 65			23 65
57544	Carrico, Charles, alias Chas. Berry.....	25 13	300 00		325 13
57770	Creighton, James H.....	90 97			90 97

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
57789	Creed, William H.		\$98 69		\$98 69
57845	Coen, Moses	\$25 99	100 00		125 99
57849	Cookson, Calvin W.	23 40			23 40
57866	Cornell, Albert H.	28 00			28 00
58136	Clark, Lewis		15 50		15 50
58307	Cole, William	107 99	75 00		182 99
58358	Culbert, Edward	31 62	75 00		106 62
58379	Coleman, William	78 61	100 00		178 61
58439	Collins, James	11 37	100 00		111 37
58449	Coons, William		155 00		155 00
58451	Clancy, William W.	16 03	100 00		116 03
58453	Cave, James			\$100 00	100 00
58462	Clapp, James L.	25 09			25 09
58465	Cooper, Elder	112 68			112 68
58467	Chase, Moses L.	213 51			213 51
58574	Creasman, William L.	62 02			62 02
58581	Curtis, John	69 61			69 91
58582	Carriger, Nicholas	12 30	100 00	50 00	162 30
58586	Costello, John	26 18			26 18
58756	Clark, William		75 00	50 00	125 00
58768	Cooper, Wickliff	131 10			131 10
58875	Crampton, Thomas		100 00	100 00	200 00
58967	Chew, Henry F.	135 79			135 79
58979	Clark, George S.	43 09			43 09
58981	Cochnowar, James H.	63 58	100 00		163 58
59085	Christian, Richard	106 14			106 14
59086	do	10 00			10 00
28091	Campbell, Thomas	29 46	100 00		129 46
59099	Carroll, David S.	47 33	300 00		347 33
59100	Cram, Moses		100 00		100 00
59165	Curley, James	17 25			17 25
59166	Connell, William T.		200 00		200 00
59168	Chandler, La Fayette	27 52			27 52
59286	Clark, Augustus P.	216 67			216 67
59346	Clark, Elmer J.	23 39	200 00		223 39
59370	Coloney, Josiah B.	15 54			15 54
59456	Cooley, Franklin	30 56	25 00		55 56
59465	Campbell, Robert M.	21 65	100 00		121 65
59477	Cumings, Shepherd	3 05	100 00		103 05
59478	do	10 00			10 00
59571	Cook, Francis A.	123 50			123 50
59581	Campbell, John M.	71 05			71 05
59715	Cracraft, John W.		100 00		100 00
59719	Carver, Arael T.		94 91		94 91
59786	Critz, Albert G.	19 44	22 22		41 66
59832	Crowell, Isaac	92 06	240 00		332 06
59833	Carson, John	374 36			374 36
59895	Cook, Charles A.		100 00		100 00
59901	Collumber, William		75 00	100 00	175 00
59907	Colvin, Francis		100 00		100 00
60157	Charleston, William	52 63	100 00		152 63
60158	do	11 00			11 00
60160	Conway, George	22 03	100 00		122 03
60161	do	12 00			12 00
60164	Calhoun, Mack	56 66	100 00		156 66
60165	do	10 00			10 00
60246	Chase, William A.	378 80	100 00		478 80
60247	Calkins, Stephen H.	26 00			26 00
60248	Chapman, Sidney	32 27			32 27
60541	Crow, Josephus		90 00		90 00
60542	do		10 00		10 00
60605	Crawford, James		100 00	100 00	200 00
60793	Clafin, Melvin	81 48	15 00		96 48
60810	Call, George		100 00		100 00
60877	Critzer, David		100 00		100 00
61748	Coulter, John A.			50 00	50 00
61891	Chumley, David A.	108 12			108 12
61974	Crickett, David		100 00	100 00	200 00
61980	Clark, George	33 36			33 36

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
61990	Cusick, Ezekiel S.	\$35 24			\$35 24
62095	Chambers, John G.	6 82			6 82
62107	Clark, Allison		\$100 00		100 00
62194	Cropper, Joshua	45 00			45 00
62195	do	7 50			7 50
62283	Corkwell, James		25 00		25 00
62353	Campbell, Nicholas P.		145 00		145 00
62411	Corey, Thomas W.		100 00		100 00
62501	Coulter, Samuel L.	316 39		\$50 00	366 39
62509	Campbell, Clark			100 00	100 00
62530	Comp, Levi		100 00		100 00
62596	Coleman, John A.	42 52			42 52
62679	Carr, Horatio G.	50 03			50 03
62819	Cullin, Thomas	89 90			89 90
62836	Clark, James H.	66 18			66 18
62850	Conger, William B.		100 00		100 00
62855	Cooper, Thomas W.	13 20			13 20
62860	Carson, Lewis E.	37 45			37 45
63060	Cross, James		100 00	100 00	200 00
63062	Carter, Robert E.		300 00		300 00
63063	Crockett, Dabney H.	22 71	42 84		65 55
63066	Carey, Samuel			50 00	50 00
63166	Cellar, John A. F.	25 01			25 01
63169	Conklin, Francis T.	15 50			15 50
63278	Carpenter, Thomas	1 55			1 55
63294	Clare, Henry P.		100 00		100 00
63308	Cook, Russell	2 98	40 00		42 98
63456	Clark, Otis C.	55 52	75 00		130 52
63499	Cundell, Charles H.		100 00		100 00
63508	Crane, Stephen A.		64 80	50 00	114 80
63523	Cain, Andrew	50 60	75 00	100 00	225 60
63528	Crozier, Samuel N.	65 95			65 95
63598	Clark, Daniel B.	153 60			153 60
63655	Cole, Anderson	47 80			47 80
63743	Cooley, William J.		75 00		75 00
63759	Carpenter, James D.	36 89			36 89
63766	Cilley, Jonathan P.	39 33			39 33
63851	Crandall, Richard	62 69			62 69
63870	Cowen, Isaac H.	14 00	75 00	50 00	139 00
63892	Carter, Richard		100 00		100 00
63917	Casad, Henry C.		100 00	100 00	200 00
63928	Cavins, Riley W.		100 00		100 00
64060	Carter, Thomas		90 00		90 00
64061	do		10 00		10 00
64089	Coal, John W.	27 97	33 33		61 30
64103	Coates, Lyman L.	49 60			49 60
64106	Coupe, Theophilus	30 80			30 80
64110	Carroll, George J.		100 00		100 00
64158	Church, Oscar L.	7 00			7 00
64215	Chandler, Charles H.	145 50			145 50
64218	Cook, James H.	49 44			49 44
64222	Carlton, James H.	107 58			107 58
64228	Caveney, Jeremiah W.	44 91			44 91
64234	Chambers, James		90 00		90 00
64235	do		10 00		10 00
64276	Clarke, Asaph M.	159 56			159 56
64311	Cooms, Pius A.	10 00	100 00		110 00
64312	Curry, Jefferson P.	49 90	100 00		149 90
64316	Chandler, Edward W.		33 34		33 34
64327	Casteel, William			36 97	36 97
64379	Cole, Amby C.	97 71	100 00		197 71
64389	Courter, Pell T.		100 00	100 00	200 00
64390	Cutshaw, William	90 56			90 56
64418	Crowell, Daniel	181 58	120 00		301 58
64437	Creason, Jasper	123 73	66 66		190 39
64441	Cox, Jordan H.			100 00	100 00
64444	Colwell, Orlando	121 20			121 20
64447	Crosswhite, Alfred C.	27 77	100 00	50 00	177 77
64472	Crawford John		100 00	100 00	200 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
64474	Campbell, John M.	\$35 52			\$35 52
64482	Casner, Joseph.	5 48	\$6 66		12 14
64582	Califf, Samuel B.	234 58			234 58
64583	Campbell, Charles.	12 42			12 42
64691	Chumley, John D.	6 07	300 00		306 07
64694	Corby, Thomas.		81 74		81 74
64696	Cullen, Michael		30 00		30 00
64701	Crowell, Hartson P.		10 00		10 00
64702	Cutter, Calvin L.	57 71			57 71
64703	Crawford, James P.		100 00		100 00
64704	Carroll, Charles A.		100 00		100 00
64707	Carr, Henry A.	110 43	15 00		125 43
64898	Carroll, Rufus.	21 31			21 31
64899	do.	5 00			5 00
64907	Condon, Burl (or Burrell)	81 50			81 50
64939	Callahan, Charles M.		100 00		100 00
65061	Cox, Nathan T.		100 00		100 00
65111	Coffin, Samuel.	83 85			83 85
65130	Cranston, Alfred.		100 00		100 00
65143	Cullimore, William H.		100 00		100 00
65340	Crumb, David H.			\$50 00	50 00
65341	Cooper, Isaac.		200 00		200 00
65342	Constant, Sidney, alias George Allen.	25 00	75 00	100 00	200 00
65651	Carpenter, David H.	53 47			53 47
65658	Carmichiel, William H.		9 78		9 78
65667	Crawford, Wilber R.	17 47			17 47
65682	Collins, Charles		100 00		100 00
65716	Cottrell, Abraham.	129 60			129 60
65734	Clay, Green.	93 49			93 49
65737	Compton, John W.	13 59			13 59
65741	Cartwright, Noah.	8 23			8 23
65743	Colly, Herman.	71 06	100 00		171 06
65852	Cogley, John A.		100 00		100 00
65866	Casey, Andrew.		100 00		100 00
65874	Cushing, William W.	110 20			110 20
65945	Collier, Albert A.		20 00		20 00
65951	Conant, Roger.		100 00		100 00
66212	Carroll, Mortimer.	30 28			30 28
66258	Clark, Aaron M.	64 85	100 00		164 85
68262	Cooper, Adam P.	98 72	75 00		173 72
66337	Clark, Simeon T.		75 00		75 00
66412	Coppock, Oliver H.		400 00		400 00
66418	Coulter, James.	284 28			284 28
66423	Crawford, Hiram.		100 00		100 00
66434	Catanach, John A.		100 00		100 00
66441	Cartwright, Frederick.	457 26			457 26
66688	Caradine, James.	47 70	100 00	50 00	197 70
66689	do.	10 50			10 50
66737	Connor, Andrew W.		100 00	100 00	200 00
66738	Cory, William H.	57 00	75 00		132 00
66892	Carlisle, Jason.		100 00		100 00
66901	Call, George.	10 66	50 00		60 66
66922	Charbanneux (or Charben), John.	74 67			74 67
66995	Clark, David E.	17 16			17 16
67237	Crandall, Watson E.	127 68			127 68
37447	Cunningham, Andrew J.	34 72			34 72
63907	Claxton, William C.	46 43			46 43
64281	Carroll, William H.		100 00		100 00
64877	Cosier, Charles.	14 11	25 00		39 11
64987	Connell, John R.	791 73			791 73
65060	Chandler, Richard O.	20 94	85 00		105 94
65664	Cleis, George W.	66 91	25 00		91 91
67153	Coffin, Simeon.		100 00		100 00
67353	Cochran, William.		100 00		100 00
67258	Cist, Henry M.		100 00		100 00
17399	Dunham, Henry.	135 00			135 00
49237	Davis, William.	10 00			10 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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		Pay of two and three year volunteers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1886, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
49311	Dill, Hiram F		\$22 83		\$22 83
56570	Donnelly, Stewart J		100 00		100 00
57266	Donnell, John D	\$221 87			221 87
57570	Deffner, Adam		100 00		100 00
57609	Dorsheimer, Jacob	35 23			35 23
57768	De France, Arthur		100 00		100 00
57846	Dougherty, Philip J	13 36	75 00		88 36
57856	Douglass, John F	103 11	100 00		203 11
58154	Dewey, Green A	40 94			40 94
58189	Degan, Narcisse	3 50		\$100 00	103 50
58190	do	10 00			10 00
58295	Dunn, George M		50 00		50 00
58301	Delaney, Patrick	14 25			14 25
58356	Day, John R	184 31			184 31
58435	Dunstan, Samuel	383 56			383 56
58444	Doughty, J. C	592 40			592 40
58452	Dorr, George W		100 00	100 00	200 00
58454	Dawson, George	12 16	100 00		112 16
58577	Davis, Sullivan	81 82	75 00	50 00	206 82
58652	Dicus, James F	25 72			25 72
58755	Dungan, John	49 85			49 85
58776	Davis, Williamson M	25 50			25 50
58781	Dillon, Elisha	102 14			102 14
58790	Denman, Francis N	16 98			16 98
58905	Davis, Joel D	391 34			391 34
58951	Dupries, Gustavus	171 00			171 00
58952	Durham, James R	21 04			21 04
59076	Dunkins (Duncan), Enoch	67 33			67 33
59077	do	7 50			7 50
59080	Dickson, William		100 00		100 00
59104	Dillon, Robert	53 17	100 00	100 00	253 17
59163	Desmarais, Charles		100 00		100 00
59287	Dunn, George		100 00		100 00
59335	Davidson, John M	9 25			9 25
59340	Durham, Thomas W	106 58			106 58
59589	Davis, William M	60 39	33 33		93 72
59823	Dyer, John	17 95			17 95
59843	Dunn, Simon M	117 95			117 95
59885	Duncan, Coleman	86 00			86 00
59887	Dwight, Richard		165 00		165 00
60156	Digere, Francis	39 66	300 00		339 66
60260	Davis, William P	138 18			138 18
60267	Deaves, George T		100 00		100 00
60268	Drake, Joseph N		100 00		100 00
60482	Dearing, George H	16 89			16 89
60483	Daniels, William F		100 00		100 00
60487	Devendorf, E		100 00		100 00
60539	Distill, Natceis	75 86	100 00		175 86
60540	do	10 00			10 00
60546	Dunham, Henry	89 49			89 49
60547	do	11 00			11 00
60772	Dubbs, Jonathan		100 00		100 00
60773	Durbin, Greene		100 00		100 00
60782	Draucher, Levi	47 93			47 93
60786	Dodson, Christian B	87 82			87 82
60789	De Wolf, William H	38 36			38 36
60802	Delaney, alias Robins, Mathew	49 66	100 00		149 66
60805	Davenport, William C		100 00	100 00	200 00
60889	Dougherty, Daniel	21 98			21 98
60890	Decker, Harmon S	100 83			100 83
61344	Douglass, Robert		100 00		100 00
61857	Durkee, Chauncey P	233 88	100 00		333 88
61893	Duncan, James		100 00		100 00
61896	Dam, Charles A	93 96			93 96
62279	Duffield, John M		100 00		100 00
62285	Davis, Warren G			50 00	50 00
62290	Davis, William E	178 17			178 17

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
62298	Decker, Madison.....	\$53 80	\$25 00		\$78 80
62507	Dickey, William.....	14 73			14 73
62513	Derstine, Benjamin M.....		52 23	\$50 00	102 23
62592	Dunn, James.....	19 50	100 00		119 50
62597	Durkin, William.....		100 00		100 00
62602	Doyle, Terrence.....	38 90	100 00	100 00	238 90
62706	Devoe, William.....	43 13			43 13
62787	Dunham, Royal S.....		100 00		100 00
62991	Davenport, William.....		100 00		100 00
63004	Dodge, Cortland H.....	64 56			64 56
63170	Davis, George P.....	8 40			8 40
63303	Dixon, Adam.....	223 38			223 38
63310	Donaldson, John.....		100 00	100 00	200 00
63313	Dungan, Frank J.....	628 64			628 64
63317	Danforth, Chester H.....		25 00		25 00
63321	Daken, Reuben E.....		100 00		100 00
63325	Davis, George C.....	100 41	25 00		125 41
63329	Durgin, Orin A.....	119 28	25 00		144 28
63573	Dykins, Daniel B.....	60 02			60 02
63580	Dorrance, Nathaniel F.....	37 76			37 76
63585	Davis, Andrew F.....		100 00		100 00
63597	Day, John F.....	12 19	75 00		87 19
63601	Davis, Nathan.....	7 02		100 00	107 02
63606	Dennis, James N.....	86 05			86 05
63610	Delaware, Ambrose S.....	31 17			31 17
63672	Dixon, Limas.....		97 68	100 00	197 68
63673	do.....	8 68	2 32		11 00
63686	Dunbar, John.....	2 16	100 00	100 00	202 16
63687	do.....	10 00			10 00
63866	Davis, Samuel.....	69 77	25 00		94 77
63963	Dibble, John J.....	112 75			112 75
63980	Drake, Philo A.....	173 12			173 12
64072	Denton, Samuel.....	95 11			95 11
64084	Daniels, Abraham.....	17 63			17 63
64088	Dean, William W.....		40 00		40 00
64092	Dunham, Charles R.....		100 00		100 00
64097	Downard, Stephen.....	33 46	100 00	100 00	233 46
64155	Davis, John W.....		100 00		100 00
64163	Dunn, Michael.....		100 00	100 00	200 00
64164	Dean, John N.....		100 00		100 00
64166	Drown, Thomas E.....	67 93	66 66		134 59
64314	Duncan, Joseph H.....		33 34		33 34
64319	Dickens, Banister W.....		100 00		100 00
64321	Douglass, Stephen.....		8 34		8 34
64440	Davis, Joshua D.....		75 00		75 00
64486	Dorherty, Robert.....	110 20	100 00	50 00	260 20
64587	Dow, Charles C.....	90 44	100 00		190 44
65012	Davis, David.....		90 00		90 00
65013	do.....		10 00		10 00
65125	Downey, William.....		100 00		100 00
65126	Dolan, John B.....		100 00		100 00
65149	Dickinson, Edward S.....		100 00		100 00
65183	Devine, Joseph.....		100 00		100 00
65346	Dawson, John A.....			50 00	50 00
65665	Duffield, George W.....	8 55			8 55
65714	Dixon, William I.....	98 17		50 00	148 17
65715	Darnel, William.....	34 74			34 74
65748	Druin, Samuel B.....	13 03	100 00		113 03
65749	Danner, John.....		100 00		100 00
65881	Dunn, William L.....		100 00		100 00
65889	Dice, John.....		60 00		60 00
65936	Delaney, James.....		75 00		75 00
65938	Deegan, John H.....	24 36			24 36
66053	Dyke, Robert.....		100 00		100 00
66230	Dunbar, Benjamin M.....		100 00		100 00
66331	Dow, Alfred N.....		100 00	100 00	200 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66335	Daws, Alfred.....	\$30 37			\$30 37
66340	Dawsey, James.....		\$100 00		100 00
66445	Dawson, John.....	95 49	140 00		235 49
66732	Davis, Charles H.....	56 77			56 77
66771	Duncan, Hugh.....	34 70			34 70
66936	Deweese, John T.....	60 50			60 50
66938	Dyas, Jerome W.....	5 03	14 29		19 32
66939	Dooley, Aaron T.....	145 75			145 75
280343	Downey, Samuel.....	38 40	33 33		71 73
59258	Durgin, John A.....	52 22	87 50		139 72
66690	Duncan, Edward.....	1 63	300 00		301 63
67311	do.....	12 00			12 00
67248	Dippel, Daniel.....	34 10			34 10
67312	Duncan, Green.....		115 00		115 00
67331	Dodge, Rodolph L.....	24 24			24 24
67693	Davenport, George.....	69 32			69 32
63957	Dobbins, Richard. (See John H. McCully.)				
7119	Edwards, John.....	25 90	25 00		50 90
18480	Ellis, Harrison W.....		100 00		100 00
45408	Edwards, Charles S.....		8 33		8 33
53753	Evans, David M.....	10 81			10 81
57704	Early (or Yearly), Andrew.....	367 59	195 00		562 59
57870	Erwin, William.....	28 50	100 00		128 50
58294	Ettinger, Daniel D.....		100 00		100 00
58366	Estes, Joseph T.....	3 85	100 00		103 85
58584	Ellason, James.....	123 20	75 00	\$100 00	298 20
58655	Evans, Benjamin.....	30 79			30 79
58728	Engledow, Calvin C.....	60 54	50 00		110 54
58769	Erwin, John B.....			100 00	100 00
58774	Ewing, John H.....	9 74			9 74
58784	Edwards, George T.....	112 52			112 52
59579	Eaton, John M.....	162 29			162 29
59821	Edwards, John A.....	64 31	235 00		299 31
59898	Epperson, William.....	72 24	240 00		312 24
60228	Ebling, Addi.....		100 00		100 00
60243	Edwards, George M.....	4 43			4 43
60475	Ely, Eugene H.....	99 59			99 59
61342	Ellis, Albert T.....	1 76	12 50		14 26
61343	Edgington, Samuel R.....	90 30			90 30
61904	Eson, John P W.....	54 98			54 98
61906	Eisworth, Frank.....	927 27			927 27
62100	Eaton, Sterling.....	49 81			49 81
62186	Ebi, Monroe.....	100 69			100 69
62421	Evans, Lewis H.....		100 00		100 00
62683	Egbert, William J.....	4 96			4 96
62818	Ely, James C.....	106 92			106 92
62844	Ewing, Elmore E.....	60 69			60 69
63230	Elmore, Charles W.....	127 60			127 60
63506	Eldred, Craten D.....		100 00		100 00
63512	Ealy, John.....	14 57	100 00	50 00	164 57
63522	Eastep, Johnson H.....	107 44			107 44
63677	Ewing, Henry.....		100 00		100 00
63869	Eaves, Simon P., alias Filander Eves.....		183 98		183 98
63883	Elder, William.....		100 00		100 00
63952	Eastling, Richard.....		40 00		40 00
63977	Eward, William.....	51 04	250 00		301 04
63984	Evans, Nathan.....	87 21	75 00		162 21
64059	Earle, Thomas.....	42 77	100 00		142 77
64083	Eger, John.....			100 00	100 00
64156	Eason, Edmund.....		25 00		25 00
64357	Earl, William H.....		100 00		100 00
64368	Eaton, Elihu.....	91 28			91 28
64485	Evans, Thomas H.....	26 73	100 00		126 73
64988	Estell, William H.....	100 10	240 00		340 10
65123	Erbe, Arthur.....		100 00		100 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
65128	Elwood, Alfred.....			\$50 00	\$50 00
65671	Epps, Jacob.....	\$9 08			9 08
65686	Edmunson, Frank.....	386 18	\$100 00	90 00	576 18
65687	do.....	10 00			10 00
65712	Edney, William N.....	144 48			144 48
65963	Eckerson, William.....	59 55			59 55
66333	Emerson, William.....	159 54			159 54
66583	Eells, Simeon L.....	28 27			28 27
66741	Evans, John.....	42 60			42 60
66997	Elleffsen, Syvert.....	126 57	75 00		201 57
59834	Esler, Charles. (See Hesler).				
14683	Foster, Asa.....	52 82			52 82
44400	Ferrell, John C.....	183 08	100 00	50 00	333 08
57264	Francisco, Allen.....	10 17			10 17
57399	Free, Henry.....		100 00	100 00	200 00
57545	Farrer, Joseph.....	41 56	100 00		141 56
62491	do.....	10 00			10 00
57718	Fuller, George.....		50 00	100 00	150 00
57726	Fetterly, William Henry.....	55 27	15 00		70 27
58310	Farley, Sidney S.....		100 00	100 00	200 00
58458	Freyburger, Michael.....	105 17			105 17
58653	Foster, William S.....	31 69	100 00		131 69
58715	Favor, Daniel M.....		100 00		100 00
58794	Fulger (or Volkert), Daniel.....	16 50	120 00		136 50
58966	Few, Williamson.....	229 65			229 65
58969	Fisher, Nelson.....		100 00	100 00	200 00
58985	Fry, George.....	87 30			87 30
59107	Foye, Samuel S.....	26 00			26 00
59158	Fiske, Aaron.....	58 50			58 50
59219	Fisher, Levi.....	166 90			166 90
59359	French, Martin W.....		100 00		100 00
59367	Flinn, William J.....	11 32	200 00		211 32
59369	Fairchild, Isaac.....		60 00		60 00
59431	Fitzki, Edward.....		100 00		100 00
59463	Flint, Augustus.....	68 00			68 00
59580	Farnsworth, John E.....	74 08			74 08
59718	Fish, Adoniram J.....	56 78			56 78
59783	Ford, Morris R.....		40 00		40 00
60137	Feige, Charles.....		100 00		100 00
60216	Friman, Jesse.....		75 00	100 00	175 00
60244	French, Simeon S.....	179 99			179 99
60424	Fergus, Samuel E.....	61 13			61 13
60477	Fallows, Samuel.....	528 02			528 02
60774	Farmer, Edward.....	5 05			5 05
60776	Folan, James J.....	213 46			213 46
60854	Flood, Thomas.....	28 84			28 84
61856	French, James D.....	58 93			58 93
61973	Faulkner, William H. H.....		100 00		100 00
61984	Foster, James S.....		100 00	100 00	200 00
62174	Froehlich, Christian.....		100 00		100 00
62512	Foster, Samuel B.....	23 50			23 50
62609	Foncanan, Jacob C.....		75 00	100 00	175 00
62666	Foote, Spencer.....	18 33	100 00		118 33
62667	do.....	12 00			12 00
62827	French, George W.....	1 62	66 66		68 28
62862	French, George H.....		100 00		100 00
62865	Ferguson, Stephen E.....			50 00	50 00
62869	Flynn, Edward F.....		200 00		200 00
63216	Ford, Edward G.....		100 00		100 00
63218	Ferguson, Hiram E.....			43 04	43 04
63219	Foley, Daniel B.....	14 49	50 00		64 49
63221	Fields, Henry R.....	23 50			23 50
63225	Fox, Barney.....			100 00	100 00
63227	Ferriter, James.....	30 21	33 34		63 55
63228	Fleetwood, Solomon.....	148 60	33 34		181 94
63229	Fields, Thomas E.....		100 00		100 00
63314	Flint, Henry P.....	26 00	100 00		126 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
63497	Ferdon, David.....	\$78 10			\$78 10
63518	Fortner, Jacob L.....	228 03	\$100 00	\$50 00	378 03
63519	Fortner, John.....	223 91	100 00	50 00	373 91
63548	Freeman, John M.....		50 00		50 00
63733	Fellows, William J.....	63 28			63 28
63744	Fletcher, Lawrence.....		70 43		70 43
63807	Fowler, James B.....		20 00		20 00
63854	Fry, Henry C.....	179 85	75 00		254 85
63873	Ford, Jacob G.....	4 70	100 00		104 70
63885	Fink, Noah.....	127 70			127 70
63888	Fleming, Abel.....	87 32	25 00		112 32
63000	Forristall, Charles H.....	21 69		50 00	71 69
63959	Fitch, Michael H.....		100 00		100 00
63962	Ford, Augustus C.....	28 81			28 81
63973	Fuson, Thomas.....		100 00		100 00
63986	Farrell, Robert.....		235 00		235 00
63989	Fleury, Jacob M.....		100 00	100 00	200 00
63990	Fredenburgh, Sylvester.....		33 34		33 34
64051	Farmer, Andrew.....	5 75			5 75
64055	do.....	1 00			1 00
64086	Fillmore, John H.....		100 00		100 00
64352	Farrar, Josiah.....	21 06			21 06
64353	Fry, Benjamin F.....		90 52	100 00	190 52
64431	Fortner, Pleasant W.....	292 70	100 00	100 00	492 70
64443	Fessenden, David B.....	4 28	75 00	50 00	129 28
64446	Field, William A.....	8 90			8 90
64487	Faunce, George W.....		100 00		100 00
65122	Fritze, Charles.....		100 00		100 00
65731	Fisk, Peter.....	83 20	100 00		183 20
65855	Foley, George.....		200 00		200 00
65859	Farrell, David.....		100 00		100 00
65886	Feuerstein, Peter.....	70 53	25 00		95 53
65933	Finn, John J.....		89 10		89 10
65944	Fitzpatrick, John.....		100 00		100 00
66035	Fitchett, Henry.....	62 37			62 37
66036	do.....	7 50			7 50
66042	Flenoy, Edward.....	12 10	100 00	100 00	212 10
66043	do.....	10 00			10 00
66218	Field, Nathaniel C.....	109 83	25 00		134 83
66271	Fagan, William.....		100 00		100 00
66278	Fountain, Levi H.....		25 00		25 00
66339	Forehand, Loyd D.....		100 00		100 00
66350	Fowler, John.....			100 00	100 00
66438	Fluke, Oliver.....	16 50	100 00	100 00	216 50
66443	Farr, William V.....	361 06			361 06
66734	Fried, David.....		100 00	100 00	200 00
66735	Fetty, Arnold H.....	38 13			38 13
66736	Finkle, Alexander.....	23 45			23 45
67245	Flagler, Edward.....	9 90	100 00		109 90
53250	Frederick, William.....	36 66	60 00		96 66
65725	Foland, Peter V.....			100 00	100 00
66067	Fish, Henry S.....	55 95			55 95
66220	Folsom, William F.....		375 00		375 00
66221	Fitzgerald, James.....	27 58			27 58
67334	Fuchs, George W.....	197 76			197 76
324	Ford, John.....	160 50			160 50
52906	Fullington, George W.....	231 83	100 00		331 83
604	Gouldson, William.....	9 89			9 89
28791	Garber, William H.....	21 23			21 23
35868	Graf, Joseph.....		100 00		100 00
37576	George, Henry.....	10 85			10 85
37577	Gouge, Scipio.....	10 85			10 85
47030	Gray, William.....		100 00		100 00
51107	Gardner, Bird.....	37 03			37 03
51108	do.....	5 00			5 00
51188	Guthrie, David B.....	256 76			256 76
56250	Griffith, Robert F.....		8 34		8 34

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
56568	Goetz, Gustavus L.		\$100 00		\$100 00
57365	Gouge, William	\$134 98	100 00	\$50 00	284 98
57406	Gillpatrick, J. H.	129 15			129 15
57483	George, Samuel F.			50 00	50 00
57790	Gibson, William B.	176 50			176 50
57848	Gallagher, George A.	8 54			8 54
58000	Galloway, George N.			50 00	50 00
58142	Grubb, Peter		100 00		100 00
58144	Garvin, Melancthon W.		115 00		115 00
58157	Gwynn, Amos	161 07	100 00	50 00	311 07
58291	Gonser, George	26 71			26 71
58293	Griffee, James		100 00		100 00
58361	Garity, Thomas R.	57 69	100 00		157 69
58483	Gearhart, Jackson		100 00	100 00	200 00
58559	Glass, Henry		290 56		290 56
58560	do	56	9 44		10 00
58660	Gordon, William I.		100 00		100 00
58753	Geary, Simpson		91 10	100 00	191 10
58770	Graves, John W.	8 86	100 00		108 86
58771	Gillespie, David	114 58			114 58
58773	Graves, George W.	89 91			89 91
58910	Garland, John	36	75 00	50 00	125 36
58980	Glezen, Joseph P.	50 74			50 74
59078	Griffin (alias Linyer), Ransom		90 00		90 00
59079	do		10 00		10 00
59092	Goss, Moses	29 30			29 30
59095	Glynn, Horace J.	15 86			15 86
59101	Greer, Benjamin F.	116 14	25 00		141 14
59157	Grace, Patrick		75 00		75 00
59214	Givens, James		100 00		100 00
59277	Geters (alias Lewis), Riland		130 00		130 00
59278	do		10 00		10 00
59349	Greenwood, Joseph		25 00		25 00
59361	Goodrich, Charles S.	28 60			28 60
59366	Goodwin, John		100 00		100 00
59482	Gillum, Richard		94 06		94 06
59483	do	4 06	5 94		10 00
59605	Giles, Chrispon D.		100 00		100 00
59636	Gritner, William			50 00	50 00
59782	Grandy, Lewis N. (or Nathan L.)		100 00		100 00
59825	Greenly, James H.		100 00		100 00
59845	Gardner, Thomas		100 00		100 00
59878	Gorsline, Alexander	18 67	33 33		52 00
59900	Gosnell, John	127 56	15 00		142 56
59902	Garrett, Caleb		100 00		100 00
59905	Gordon, Edmund	30 00			30 00
60266	Gabriel, Anton		100 00		100 00
60270	Gosslee, Richard H.		100 00		100 00
60488	Gresson, Robert E.	115 15	200 00		315 15
60535	Grimeo, Julian			100 00	100 00
60595	Greenswig, William	78 53			78 53
60771	Gale, Walter	107 39	100 00		207 39
60777	Granger, Alvan P.	137 95			137 95
60779	Garrett, Squire O.	4 35			4 35
60781	Galloway, John W.	9 79			9 79
60784	Gallagher, James	184 17	15 00		199 17
60858	Gant, Giles	15 59			15 59
61337	Grout, Chester G.			50 00	50 00
61775	Gambill, Levi	54 94			54 94
61901	Grable, Frederick	196 69			196 69
61907	Grensel, Nicholas	134 89			134 89
61989	Gilkerson, Thomas	102 36			102 36
62104	Gorman, Dennis J.	120 10			120 10
62105	Gargan, Thomas J.	155 99			155 99
62187	Gettier, Peter J.	282 04	33 33		315 37
62198	Greenwell, Henry	39 96			39 96
62199	do	5 00			5 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
62278	Giddings, Ephraim.....		\$100 00		\$100 00
62302	Glenn, Elias J.....	\$18 41	25 00		43 41
62303	Good, Thomas.....		60 00		60 00
62308	Gentis, Asa.....	1 87	33 34		35 21
62519	Green, Clark H.....	125 76	15 00		140 76
62522	Green, Mordica.....	52 21			52 21
62523	Gallego, Antonia A.....	89 20			89 20
62591	Grim, Henry.....	24 95			24 95
62673	Gilson, William.....	43 54	15 00		58 54
62697	Gilbert, Sylvester G.....	363 80			363 80
62996	Gallagher, Joseph.....	36 28	240 00		276 28
62998	Gagan, Patrick.....			\$50 00	50 00
63061	Gragg, Washington J.....	11 10	100 00		111 10
63301	Granger, Charles.....	50 36			50 36
63307	Glenn, Jesse.....	112 00			112 00
63318	Gilliland, John.....	61 17			61 17
63319	Gerough, George.....		100 00		100 00
63322	Gordon, Charles H.....		300 00		300 00
63498	Gilbert, Asher W.....	53 02	66 67		119 69
63576	Gearhart, Christopher C.....		75 00		75 00
63577	Gemmill, Evens H.....		10 45		10 45
63581	Griffis, Edward E.....		200 00		200 00
63587	Glasscock, John R. B.....	40 35			40 35
63594	Gamble, James D.....	12 61			12 61
63604	Giles, Emerson F.....	152 10			152 10
63681	Gaden, Charles.....	44 12	100 00		144 12
63682	do.....	10 00			10 00
63737	Griffith, Ansley W.....	15 01			15 01
63884	Greeling, Adam.....	40 63	75 00		115 63
63897	Gano, Benjamin D.....	151 93			151 93
64056	Gibson, Ephraim.....	73 56	300 00		373 56
64076	George, John F.....	60 44	150 00		210 44
64081	Goodson, Bennett.....		100 00	50 00	150 00
64085	Green, Isaiah.....	18 13			18 13
64091	Grant, John E.....		100 00		100 00
64095	Goff, George.....		100 00		100 00
64161	Gilbert, Andrew J.....		100 00		100 00
64320	Griggs, William.....		33 33		33 33
64260	Graham, Franklin.....		200 00		200 00
64372	Gallimore, Elias M.....	18 67			18 67
64374	Grubb, Lewis L.....	89 05			89 05
64424	Gesner, Peter.....		33 33		33 33
64490	Gay, James P.....		100 00		100 00
64571	Green, Benjamin F.....	11 68			11 68
64935	Gideon, George W.....		100 00		100 00
65054	Gilbert, Alexander M.....	98 37			98 37
65056	Gerdes, Bernard.....	52 40			52 40
65349	Grobber, Godfried.....		250 00		250 00
65652	Graham, William.....	124 64			124 64
65655	Garvin, Joseph.....		100 00	100 00	200 00
65680	Gaines, Huston.....	59 79	100 00		159 79
65681	do.....	11 00			11 00
65746	Green, Edward H.....	66 57			66 57
65877	Gardner, Robert.....	18 24	25 00		43 24
65887	Galway, Thomas F.....		77 39		77 39
65948	Gudgeon, Charles.....		75 00	100 00	175 00
66039	Green, Joseph.....	101 44	300 00		401 44
66040	do.....	10 00			10 00
66048	Green, Stephen.....	11 72			11 72
66049	do.....	1 00			1 00
66263	Griffin, Elliott P.....		100 00		100 00
66332	Graham, William H.....		100 00		100 00
66343	Gunther, Adolph.....		100 00	50 00	150 00
66433	Gillespie, Robert.....		100 00		100 00
66437	Goodrich, James S.....	16 40	100 00		116 40
66672	Griffith (or Griffin), George.....	53 42	195 00		248 42
66673	do.....	10 50			10 50
66674	Gale, Jefferson.....		90 00		90 00
66675	do.....		10 00		10 00
66895	Goodwin, Wilson S.....		100 00		100 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
67151	Gray, Robert H.....		\$100 00		\$100 00
67157	Getchell, George W.....		100 00	\$100 00	200 00
6778	Gaskill, Edwin C.....	\$289 85			289 85
66387	Green, Samuel. (See George W. Jones.)				
1365	Haber, John.....		25 00	100 00	125 00
7056	Harvey, Moses C.....	41 13			41 13
8735	Hardin, George.....	146 58	100 00	100 00	346 58
21147	Huggins, Elsy.....	22 47	15 00		37 47
24046	Henderson, Charles L.....	22 33			22 33
28784	Hartranft, Levi W.....	15 49	55 00		70 49
33914	Henry, Peter.....		100 00		100 00
37575	Herrod, Thomas.....	10 85			10 85
44004	Hixon, Benjamin.....	88 88	50 00		138 88
44193	Hooper, Charles H.....		100 00	50 00	150 00
52582	Hirt, Charles.....		100 00	100 00	200 00
53727	Held, George W.....		100 00	50 00	150 00
54184	Hicks, Willis G.....		100 00		100 00
55259	Hancock, Zachariah.....		200 00		200 00
56408	Hicks, Rina.....	8 61			8 61
56810	Hartranft, Uriah C.....	211 23			211 23
57566	Hunt, Samuel J.....	22 54			22 54
57669	Hufford, David C.....	141 23	75 00	50 00	266 23
57670	Hendryx, William.....		100 00	50 00	150 00
57974	Herman, William.....	68 09	100 00	50 00	218 09
58137	Hopwood, Thomas H.....	61 49	100 00		161 49
58158	Hicks, Linsley.....	62 61	15 00		77 61
58164	Higgs, Noah C.....	50 69	75 00	50 00	175 69
58167	Hyatt, Edward.....	114 80	100 00		214 80
58171	Hays, Joseph.....	79 70	76 66		156 36
58172	do.....	10 00			10 00
58187	Hardway, Henry.....		87 46		87 46
58188	do.....		7 50		7 50
58306	Herriman, John.....	214 18			214 18
58362	Herrick, William.....	4 28	100 00		104 28
58437	Herron, David P.....	6 14			6 14
58554	Hamilton, Ned.....	29 95	100 00		129 95
58555	do.....	12 00			12 00
58564	Hare, Lewis.....		90 00		90 00
58565	do.....		10 00		10 00
58571	Hulgin, Emesly T.....	91 35	75 00		166 35
58573	Hyde, Andrew J.....	107 62			107 62
58578	Hall, David.....	132 79	87 50		220 29
58656	Howell, George W.....	29 70			29 70
58661	Haynes, Charles C.....	40 61			40 61
58718	Herbst, Gottfried.....		100 00	100 00	200 00
58779	Hance, Samuel F.....	173 71			173 71
58786	Hamer, Thomas.....	180 82			180 82
58789	Hitt, Samuel N.....	244 98			244 98
58892	Herron, John R.....	49 60			49 60
58901	Heller, Robert J.....	55 80			55 80
59089	Hendryx, James.....	21 13	300 00		321 13
59090	do.....	10 00			10 00
59156	Hines, Timothy.....	20 00			20 00
59344	Heydon, Ephraim W.....	187 94			187 94
59360	Hubner, John.....	69 30			69 30
59432	Hogue, John B.....	529 02			529 02
59450	Hedglen, Andrew C.....	183 34	75 00	50 00	308 34
59451	Heidenreich, Ernst.....		100 00	100 00	200 00
59458	Halsey, Isaac B.....	213 68	100 00		313 68
59486	Hill, Joseph.....		93 53		93 53
59487	do.....	3 53	6 47		10 00
59574	Hoxie, Hiram B.....	167 65			167 65
59712	Hall, Ezra S.....	24 61			24 61
59726	Hyatt, William.....	45 82			45 82
59771	Hornbeck, James N.....	43 88	75 00		118 88
59774	Hall, Rosell W.....	189 46			189 46
59775	Hilton, Daniel.....	1 36			1 36
59778	Hardy, John D.....	66 24	325 72		391 96
59780	Huntley, Wallace W.....		190 00		190 00
59812	Howard, Azor W.....	141 07			141 07

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
59834	Hesler (or Esler), Charles		\$100 00		\$100 00
59836	Hudgel, Reason	\$18 80			18 80
59839	Hockstedler, David		200 00		200 00
59848	Hill, C. Judson	64 04			64 04
59881	Hollenbeck, Zeph. D.	42 97			42 97
59883	Herring (or Herrin), Henry	83 63			83 63
59884	do	7 50			7 50
59893	Hooper, Clayton B.	72 02			72 02
60208	Hemry, Alfred D.		33 33		33 33
60218	Howell, James W.	32 91	25 00		57 91
60228	Helsel, John		16 83		16 83
60256	Hahn, Joseph	6 87			6 87
60357	Hair, Hiram		120 00		120 00
60474	Hayward, Eben T.	27 91			27 91
60476	Hayward, Paul D.		100 00	\$100 00	200 00
60545	Harrison, William	76 13	100 00	100 00	276 13
60591	Hartsock, William A.		100 00		100 00
60601	Healy, Stephen C.		75 00	100 00	175 00
60603	Hunter, William C.		100 00		100 00
60693	Hedinger, Isaac	3 46	120 00		123 46
60775	Haas, Louis F.	245 57			245 57
60796	Hyland, John		100 00		100 00
60884	Hayes, John B.		100 00		100 00
61334	Harris, James M.		100 00		100 00
61851	Hawk, Phillip	23 50	150 00		173 50
61863	Hess, Jonathan	47 70	15 00		62 70
61972	Holl, Richard S.		73 42	100 00	173 42
61975	Heller, Philip		75 00		75 00
61978	Hixon, Timothy		100 00	100 00	200 00
62093	Howard, George	38 16	15 00		53 16
62175	Holmes, Henry R.	15 98			15 98
62193	Hall, Jack	12 39			12 39
62262	Hack, Peter	206 84			206 84
62280	Holdridge, D. Cyrus		100 00		100 00
62286	Hutchinson, Calvin T.		100 00		100 00
62293	Hier, George H.	48 86	25 00		73 86
62428	Helmer, Joseph		100 00		100 00
62495	Hooks, Moses	10 00			10 00
64910	do	86 36	300 00		386 36
62527	Hitchins, Charles	19 16	100 00		119 16
62656	Hattin, Dennis		90 00		90 00
62657	do		10 00		10 00
62688	Harris, Joseph	15 05			15 05
62696	Harris, Ransom		100 00	100 00	200 00
62700	Hiltz, John U.		100 00		100 00
62780	Hart, Thomas	28 05			28 05
62785	Holzhauser, Frederick	91 89			91 89
62786	Harris, Samuel		100 00		100 00
62821	Higginbottom, Robert	350 11			350 11
62828	Hardesty, James J.		100 00	100 00	200 00
62838	Haskins, Charles E.	41 46			41 46
62868	Henderson, Samuel		140 00		140 00
63055	Hagewood, Michael	29 20	100 00	100 00	229 20
63056	Howard, Henry		66 67	50 00	116 67
63153	Hoy, David	29 76			29 76
63248	Hillman, Henry	9 57	100 00		109 57
63249	do	10 00			10 00
63275	Herron, George F.	68 07	100 00		168 07
63292	Hussey, George A.		100 00		100 00
63293	Hammond, Dewitt C.		100 00		100 00
63302	Hubbell, John L., alias John Bowers	127 57	100 00		227 57
63309	Hibbard, Gardiner C.		100 00		100 00
63453	Hoag, Joseph	12 86	40 00		52 86
63458	Halsey, Frank C.	86 40	240 00		326 40
63468	Handley, James A.	125 61	95 00		220 61
63504	Hess, Byron E.		100 00		100 00
63513	Hackney, Henry		100 00		100 00
63530	Hendrickson, Jerry H.	29 86	160 00		189 86
63666	Hennes, Andrew J.	4 05	55 00		59 05
63674	Hughes, Thomas		95 42		95 42

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
63675	Hughes, Thomas.....	\$5 42	\$4 58		\$10 00
63758	Howard, George M.....	15 16	15 00	.....	30 16
63833	Hemmings, Dunkie.....	60 48	100 00	.....	160 48
63834	do.....	10 00	.....	.....	10 00
63859	Henry, John S.....	35 13	25 00	.....	60 13
63926	Hunter, Charles.....	181 58	.....	.....	181 58
63975	Hasty, Joseph.....	.....	100 00	.....	100 00
63979	Harvey, Rufus L.....	.....	100 00	.....	100 00
63982	Hurd, Anson.....	125 14	.....	.....	125 14
63985	Herndon, George W.....	143 70	100 00	.....	243 70
64052	Harrison, Lemuel.....	.....	100 00	.....	100 00
64057	Hardee, Amos.....	.....	287 00	.....	287 00
64058	do.....	.....	13 00	.....	13 00
64062	Holland, Alfred.....	.....	181 49	.....	181 49
64063	do.....	.....	10 00	.....	10 00
64093	Hall, Henry J.....	.....	100 00	\$100 00	200 00
64094	Hesselton, Moses P.....	.....	100 00	.....	100 00
64157	Harvey, John T.....	.....	100 00	.....	100 00
64159	Holloway, David S.....	.....	100 00	.....	100 00
64211	Hesselton (or Hazelton) Nelson W.....	65 44	37 50	.....	102 94
64212	Henri, Walter.....	11 81	.....	.....	11 81
64241	Hoyt (alias White), Charles.....	68 76	50 00	.....	118 76
64242	do.....	10 00	.....	.....	10 00
64251	Hoppe, Henry.....	.....	100 00	.....	100 00
64267	Harris, Joseph M.....	53 63	55 00	.....	108 63
64330	Hamilton, Andrew G.....	900 41	.....	.....	900 41
64351	Hulland, William R.....	80 33	.....	.....	80 33
64361	Hovey, A. B.....	81 20	75 00	50 00	206 20
64369	Henry, Marcus W.....	11 52	235 00	.....	246 52
64377	Hammer, Conrad.....	19 90	.....	.....	19 90
64388	Himes, John.....	241 13	.....	.....	241 13
64421	Henry, Philip.....	6 50	100 00	.....	106 50
64435	Hammonds, Jesse W.....	56 76	100 00	.....	156 76
64449	Holmes, Joseph L.....	.....	.....	50 00	50 00
64483	Harer, Daniel.....	21 28	25 00	.....	46 28
64576	Harshaw, Henry B.....	.....	100 00	.....	100 00
64698	Holman, Henry.....	16 72	.....	.....	16 72
64705	Hofert, Joseph.....	68 32	.....	.....	68 32
64905	Holloway, George.....	87 27	100 00	100 00	287 27
64906	do.....	11 50	.....	.....	11 50
64984	Hand, Andrew J.....	.....	295 00	.....	295 00
65022	Henry, John.....	33 73	300 00	.....	333 73
65023	do.....	10 00	.....	.....	10 00
65059	Harris, Joseph D.....	78 43	100 00	.....	178 43
65139	Howell, Joseph B.....	.....	200 00	.....	200 00
65165	Heller, William.....	.....	.....	50 00	50 00
65669	Hyatt, Isaiah.....	101 72	100 00	100 00	301 72
65677	Hamilton, Joseph.....	.....	90 00	.....	90 00
65678	do.....	.....	10 00	.....	10 00
65720	Haverty, Patrick M.....	89 82	.....	.....	89 82
65721	Hitchcock, William.....	.....	100 00	.....	100 00
65722	Holladay, Charles C.....	.....	54 05	.....	54 05
65723	Heusted, W. V.....	197 66	.....	.....	197 66
65851	Haynes, John S.....	.....	100 00	.....	100 00
65858	Howe, Henry J.....	.....	100 00	.....	100 00
65864	Hall, Ribero D.....	.....	100 00	.....	100 00
65876	Huber, Jacob.....	190 32	.....	.....	190 32
65878	Hall, John K.....	.....	100 00	.....	100 00
65955	Hudson, William S.....	24 56	.....	.....	24 56
65957	Hare, Sidney J.....	71 33	.....	.....	71 33
66031	Hychu, Joshua.....	.....	90 00	.....	90 00
66032	do.....	.....	10 00	.....	10 00
66064	Harris, Richard P.....	2 52	.....	.....	2 52
66338	Herr, Andrew.....	.....	100 00	.....	100 00
66342	Hagedon, George.....	.....	100 00	.....	100 00
66344	Hulett, Edwin H.....	.....	100 00	.....	100 00
66346	Hawkins, John M.....	.....	100 00	.....	100 00
66348	Harlin, Patrick.....	.....	100 00	.....	100 00
66349	Hall, Andrew A.....	.....	100 00	.....	100 00
66417	Hayes, Joshua L.....		100 00		100 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66424	Hyatt, Henry H.		\$100 00		\$100 00
66435	Hascall, Moses G.		210 00		210 00
66579	Halbwachs, Conrad		100 00	\$100 00	200 00
66589	Huls, Hunry V. T.	\$16 98			16 98
66590	Hoffman, Charles		100 00		100 00
66742	Howe, Oramel G.		100 00		100 00
66897	Hubbard, William H.		100 00		100 00
66913	Hutchinson, Henry		100 00		100 00
66900	Hayward, Henry R.		100 00		100 00
28667	Herbstreit, Albert J.	15 00			15 00
58720	Hoobler, John R.		50 00	100 00	150 00
62096	Hillier, David	172 70			172 70
65661	Hermans, Joseph	38 16	100 00	50 00	188 16
65872	Hurst, Martin W.	29 56			29 56
66902	Hawes, Alonzo	40 29	100 00		140 29
66917	Hughes, Samuel			50 00	50 00
67155	Higgins, William H.		100 00		100 00
45018	Haight, Erastus	21 23	100 00		121 23
66563	Hyatt, Samuel B.		140 00		140 00
66774	Hogan, James W.	55 90	100 00		155 90
66733	Hamilton, John	375 28	100 00	100 00	575 28
65966	Hill, Edwin J.	102 53	80 00		182 53
46958	Isaacs, Matthew		100 00		100 00
59904	Irwin, John	225 33			225 33
62781	Irwin, Washington		100 00		100 00
63164	Irion, Henson C.	41 42			41 42
63224	Ivins, Henry	21 10	75 00		96 10
63972	Irwin, George M.	61 44			61 44
64426	Ivory, William W.		135 00		135 00
54090	Jenks, James D.	12 81			12 81
55891	Jolly, Bryant		25 00		25 00
56808	Jump, Joseph E.		100 00		100 00
57444	Jones, Richard O.	30 45			30 45
57841	Jacoby, Wilkinson	24 67	33 33		58 00
58138	Jones, William H.	7 76	12 50		20 26
58163	James, Arcurius	26 73			26 73
58359	Jones, John W.	20 66			20 66
58371	Johnson, Burrell		82 50		82 50
58372	do.		7 50		7 50
58445	Johnson, Frank	125 22	80 00		205 22
58561	Jackson, Babe	11 65			11 65
58668	Johnson, John C.	91 39			91 39
58762	Jennings, John W.	30 44			30 44
58961	Johnson, Henry	134 20	100 00	100 00	334 20
58965	Jones, Robert C.	80 95			80 95
58977	Jackson, Levi F.	93 80			93 80
59109	Johnson, Samuel		10 13		10 13
59228	Jones, Richard J.	133 73	100 00		233 73
59356	Johnson, James B.		100 00		100 00
59363	Johnson, John	79 89	15 00		94 89
59899	Judson, James R.	9 90	100 00		109 90
60159	Jordon, Robert	38 78			38 78
60215	Jones, Joshua	21 36			21 36
60242	Jones, Virgil M.	21 53			21 53
60245	Johnson, William	46 98	75 00		121 98
60423	Johnson, Reuben B.	21 37			21 37
60490	Jantiss, Christy	8 16		100 00	108 16
60593	Jackson, James A.	13 29	80 00		93 29
60596	Jackson, Elias	23 08			23 08
60608	Johnson, James C.	114 85			114 85
62001	Jackson, Laban	16 04			16 04
62091	Jewell, Elisha	44 82	33 33		78 15
62176	Johnson, William B.	57 51	100 00		157 51
62260	Jones, Castner	22 08			22 08
62413	Jenkins, Henry	213 36	75 00	50 00	338 36
62528	Jones, Abraham	153 40	100 00	100 00	353 40

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
62610	Jones, William C	\$52 00	\$75 00	\$100 00	\$227 00
62652	Johnson, Samuel	23 80	100 00		123 80
62653	do	11 50			11 50
62658	Johnson, James	11 31			11 31
62660	Johnson, Taylor		92 53		92 53
62561	do	3 53	7 47		11 00
62671	Jordon, Josiah H		61 11		61 11
62674	Jewett, David G	19 53	100 00		119 53
62825	Jacobs, George W	230 46			230 46
62847	Jones, William H		100 00		100 00
62867	Jordan, Hezekiah		75 00	100 00	175 00
62922	Johnson, Daniel C	18 70			18 70
62999	Jones, Horace W			50 00	50 00
63064	Johnston, William M	2 55	25 00		27 55
63451	Jahn, Hermann	27 50			27 50
63503	Jacks, John	216 82			216 82
63517	Jones, Landon C	126 41	100 00	50 00	276 41
63600	Jarvis, Benjamin		100 00		100 00
63651	Janes, George M	109 90			109 90
63754	Jackson, Merrick	208 38			208 38
63848	James, Perry (or Parry)	7 93			7 93
63879	Jones, Harry S		100 00		100 00
63899	Jacobs, Francis K	32 49			32 49
63971	James, Benjamin	5 64	95 00		100 64
63978	Jones, Richard		100 00		100 00
64325	Jackson, Benjamin F		115 00		115 00
64367	Johnson, Alfred		80 65	50 00	130 65
64410	Johnson, William A	7 70			7 70
64439	Jemison, Isaac	26 00			26 00
64588	Johnson, Jerome B		100 00		100 00
64938	Jones, Henry F		100 00		100 00
64948	Johnson, Freeman	69 95			69 95
65064	Johnson, Volney C		100 00		100 00
65065	Jeneson, David C		100 00		100 00
65150	Jones, Thomas		100 00	100 00	200 00
65676	Jones, Wallace		100 00		100 00
65869	Johnson, James W	3 46			3 46
66421	Jackson, Matthew E		100 00		100 00
66567	Josselyn, Simeon T		100 00		100 00
66898	Judd, George E		100 00		100 00
66937	Johnson, James H	154 08			154 08
67131	Jones, Alonzo		100 00	100 00	200 00
66387	Jones, W., alias Samuel Green	83 14	66 67		149 81
66388	do	10 00			10 00
9312	Knowles, Byron A	19 06		100 00	119 06
25690	Kelly, Matthew	16 90			16 90
51132	Knowles, Thomas R	282 05			282 05
53558	Klein, Lewis		25 00		25 00
54108	Keller, Lewis	30 99			30 99
56382	Knapp, Lewis		75 00	50 00	125 00
57784	Kemble, William F	18 36			18 36
57860	Koch, Christian J	899 98			899 98
58146	Kramme, Henry		100 00	50 00	150 00
58156	Kimmel, M. V. B	104 28	220 00		324 28
58166	Kirk, John	11 72			11 72
58182	Keeton, John	32 33	100 00		132 33
58183	do	11 00			11 00
58300	Kain, John	28 60	100 00		128 60
58378	Keyhoe, James F	27 90			27 90
58716	Kendall, Cyrus D	203 78	100 00		303 78
58767	Kays, William	42 20	75 00	50 00	167 20
58898	Keith, Warren C	12 06			12 06
58973	King, Jacob B	470 16		50 00	520 16
59071	Kimble (or Kimbro), William	60 20	100 00		160 20
59151	Krebs, Jacob	53 73			53 73
59218	Kirk, Lester K	144 11			144 11
59220	Kirk, James B	66 18			66 18

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
59347	Kent, Jackson J	\$151 18	\$15 00		\$166 18
59576	Kile, James H.	44 91		\$50 00	94 91
59829	Kinney, Patrick	199 67	100 00	100 00	399 67
59906	Kerr, Robert W.			50 00	50 00
60166	Keith Henry	74 33	300 00		374 33
60167	do	10 00			10 00
60422	Kenyon, Dennis	254 74			254 74
60872	Kemper, John	86 07			86 07
60873	Kennicott, Amasa	169 60			169 60
60874	King, Joseph W.	131 94			131 94
60875	Kauffman, Jacob	14 28			14 28
60876	Kelly, Bernard		100 00		100 00
60878	Kennedy, John L.		100 00	100 00	200 00
60879	Kishbaugh, John		100 00		100 00
60880	Kresge, James M.	62 67			62 67
60881	Kocher, Christopher		100 00		100 00
60883	Koonce, Samuel A.		100 00		100 00
60886	Kernberger, Andreas			100 00	100 00
61859	Kent, Eugene E.	48 00			48 00
62264	Kelsey, Dandridge E.	155 51			155 51
62695	Konan, Paul		100 00		100 00
62710	Ketchum, George E.	55 92			55 92
62778	Kille, David	42 75			42 75
62845	Klee, Frederick		100 00	50 00	150 00
62864	Kenison, John S.		200 00		200 00
62977	Knapp, John S.	21 30	100 00		121 30
63003	Kaiser, William		100 00	50 00	150 00
63155	Knee, Uriah L.		25 00		25 00
63500	Keese, Francis S.		100 00		100 00
63529	Kenney, William J.	57 52			57 52
63583	Kent, Albert C.		125 00		125 00
63736	Knapp, Bradley	43 44	75 00	50 00	168 44
63881	Karney, Stephen	48 49	25 00		73 49
63886	Kincade, William T.		33 33		33 33
63895	Kuhn, William E.	16 68			16 68
63929	Knowles, John L.	24 93			24 93
63954	Kennedy, James	40 36	75 00		115 36
63976	Kennedy, Daniel		75 00		75 00
63983	Kiser, William F.		100 00	100 00	200 00
64096	Kennedy, Patrick J.	199 40	100 00	50 00	349 40
64153	Kehr, Henry		100 00	100 00	200 00
64168	Keck (or Keok), Conrad	79 09			79 09
64221	Keeting, Charles W.		100 00		100 00
64256	Kirk, Newton T.	281 16			281 16
64356	Kennedy, Milton		100 00		100 00
64413	Kear, Isaac		100 00		100 00
64450	King, James W.	54 56	33 33		87 89
64932	Kriege, Henry		100 00		100 00
64936	Krum, Jacob	4 95			4 95
64949	Kinsey Charles S.	65 45	100 00		165 45
65052	Kinney, George A.	121 20	33 34		154 54
65659	Kraft, William		100 00		100 00
65862	Keiser, Philip E.		100 00		100 00
65868	Kimes, Joseph		100 00		100 00
65870	Keefer, James A.		100 00		100 00
65959	Knapp, Charles L.	6 14			6 14
65960	Kahlert, George		100 00		100 00
65961	Kath (or Cath), Robert			100 00	100 00
66261	Kinder, Ephraim	31 36	100 00		131 36
66265	Kendall, William K.	42 45			42 45
66270	Kuhnhoff, Charles		100 00		100 00
66356	Keefer, William H.		100 00		100 00
66366	Keegan, Stephen	17 85			17 85
66368	Kelsey, William A.		100 00		100 00
66370	Ketchum, Richard C.		100 00	50 00	150 00
66428	Knapp, Sylvester	4 86			4 86
66571	Kast, Jeremiah N.		75 00		75 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66580	Krughoff, Louis		\$100 00		\$100 00
66896	Kinison, Lawrence	\$9 15	33 33		42 48
66899	Knowles, Percival		100 00		100 00
66214	Kinsley, John G.			\$50 00	50 00
57440	Keegan, Phillip		100 00	100 00	200 00
65950	Kinyon, Milo	6 34	120 00		126 34
66379	Knapp, Abner C.	42 29			42 29
66916	King, Franklin		33 33		33 33
67252	Keplinger, William H	420 77			420 77
66912	Kelly, Patrick		100 00		100 00
4575	Lightfoot, William			100 00	100 00
32118	Lewis, William		40 00		40 00
10906	Layton, Joseph		25 00		25 00
54371	Logan, Thomas H.	138 89	115 00		253 89
54372	do	10 00			10 00
54777	Lewis, Mitchell	42 90			42 90
56477	Lehman, Jeremiah K		200 00		200 00
56940	Lee, General	21 05			21 05
56941	do	5 00			5 00
57445	Layman, Sebern J		100 00		100 00
57448	Lorance, Jackson	75 08			75 08
57560	Lancaster, Reuben	466 65			466 65
57847	Lucas, Martin A.	56 23			56 23
57850	Lippert, Eugene W.		100 00		100 00
58145	Lewis, Benton			50 00	50 00
58389	Lawrence, Simon	5 53	75 00		80 53
58433	Little, William M.	12 70			12 70
58588	Loring, Albert	279 46			279 46
58651	Lindley, James S.	26 00			26 00
58670	Lecrone, Albert W.	31 81			31 81
58727	Love, Abraham			50 00	50 00
58959	Loller, George W.		100 00		100 00
58970	Lott, Warner	18 69	15 00		33 69
58972	Lidick, Joseph W.	123 41			123 41
59074	Lackins, Harrison	20 76	100 00		120 76
59075	do	10 00			10 00
59096	Long, Lewis		115 00		115 00
59098	Lane, Charles H.		100 00		100 00
59102	Lasley, George W.		100 00		100 00
59105	Lamp, Asa		100 00		100 00
59212	Lord, Charles F.	48 57	25 00		73 57
59284	Lampman, Charles V	58 82			58 82
59332	Long, David P.		100 00		100 00
59334	Lee, Henry S.	198 05			198 05
59441	Lynch Michael B.	167 18			167 18
59471	Lane, Freeman	12 25	100 00		112 25
59711	Lang, Moses	182 25			182 25
59822	Logue, John S.	119 31			119 31
59847	Ladoo, Alexander	203 98	200 00		403 98
59903	Lowry, James E.	52 26			52 26
60224	Loobey, Michael		25 00		25 00
60235	Larned, Sylvester	145 83			145 83
60254	Landher, John	27 20	25 00		52 20
60537	Lucas, Mat.	205 35	100 00	100 00	405 35
60538	do	10 00			10 00
60792	Loka (Lockay), John	109 26	115 00		224 26
61866	Lakner, Michael	40 80			40 80
61892	Letton, Theodore W.	136 80			136 80
61894	Ludwig, Oscar	51 12			51 12
61909	Lynch, David J.	119 50			119 50
61982	Long, Adam	36 40			36 40
62027	Lyon, Leroy A.		80 00		80 00
62188	Leggett, Henry F.		100 00		100 00
62207	Larue, William	4 80	100 00		104 80
62265	Luther, C. Frank	74 62			74 62
62267	Lynes, John	285 08			285 08
62271	Littler, John J.		100 00		100 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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		Pay of two and three year volunteers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
62414	Little, James.....			\$50 00	\$50 00
62416	Leinen, John.....		\$75 00	100 00	175 00
62503	Lewis, Joseph B.....	\$59 59			59 59
62595	Lockhart, Davis A.....	187 83			187 83
62598	Larison, Thomas J.....	313 93			313 93
62600	Lafferty, George W.....		100 00		100 00
62601	Lloyd, James.....	148 56			148 56
62608	La Bar, Alonzo.....	49 87			49 87
62709	Lindsay, Alexander.....	96 22			96 22
62830	Loux, William.....	108 73		50 00	158 73
62834	Langston, Joseph.....	13 00	100 00		113 00
62856	Leland, John B.....	29 18	33 33		62 51
63009	Leonard, Michael.....		17 10		17 10
63151	Lacey, Anderson P.....	102 43			102 43
63157	Lewis, Comfort.....	46 92	33 33		80 25
63222	Lowder, James.....	23 40			23 40
63226	Lanham, Elias.....		100 00	100 00	200 00
63234	Lockhart, Benjamin.....	222 33	100 00		322 33
63235	do.....	11 25			11 25
63250	Large, Thomas.....		290 77		290 77
63671	do.....	77	9 23		10 00
63295	Lawrence, John C.....		100 00		100 00
63311	Ludlow, George A.....		100 00		100 00
63323	Laubach, Franklin.....	34 39			34 39
63514	Lones, James L.....	7 26	100 00	50 00	157 26
63654	Looney, Peter.....		100 00		100 00
63731	Lovell, Nathan V.....	59 97	75 00	50 00	184 97
63753	Lawrence, Edwin L.....	78 96			78 96
63755	Leroy, Jacob.....		100 00		100 00
63867	Latting, Frederick L.....		25 00		25 00
63875	Linn, Joseph L.....	117 50			117 50
63880	Law, Robert C.....	26 00			26 00
63974	Landrey, Bradley.....		100 00		100 00
64066	Lawson, Henry.....	23 31	100 00	100 00	223 31
64070	Long, Charles.....	37 45			37 45
65011	do.....	5 00			5 00
64101	Lynn, Abraham.....		75 00	50 00	125 00
64108	Lebon, Christian.....		100 00		100 00
64109	Love, John C.....	37 87			37 87
64154	Like, James.....	28 66	75 00		103 66
64165	Little, John W.....	45 06			45 06
64253	Legate, Hyman M.....			100 00	100 00
64355	Little, Samuel T.....		300 00		300 00
64375	Lugenbeel, Andrew J.....	132 30			132 30
64414	Lafferty, George W.....	83 00			83 00
64432	Lewis, Ephraim.....	153 19			153 19
64478	Lee, Edgar.....		100 00		100 00
64944	Lattimore, Robert.....	9 50	55 00		64 50
65051	Lannan, Michael.....		200 00		200 00
65057	Lane, John W.....		100 00	100 00	200 00
65120	Langenfeld, Francis.....		100 00		100 00
65932	Laube, William.....		100 00		100 00
66050	Logan, Thomas.....		90 00		90 00
66373	do.....		10 00		10 00
66253	Lent, Seneca W.....			50 00	50 00
66362	Laubrick, Christopher F.....		100 00		100 00
66411	Lockman, Charles A.....		120 00		120 00
66444	Longden, William.....	43 68	85 00		128 68
66682	Lewis, Henry.....	8 72			8 72
67275	Lewis, Abraham.....	15 93			15 93
57258	Loveless, Sylvester C.....	138 93			138 93
66632	Landon, David.....		75 00		75 00
67249	Lemert, Orren D.....	379 25			379 25
67772	Lahey (or Leahey), William.....			50 00	50 00
67000	Layham, William.....	36 00	35 00		71 00
66650	Lamb, Frank.....		73 63		73 63
1274	Manning, Absalom.....		75 00		75 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
23999	Mehan, James.....		\$8 30		\$8 30
37579	Morris, Anderson.....	\$12 76			12 76
51589	Merimee, John T.....	6 73			6 73
52484	Moore, Jackson L.....	94 09			94 09
52776	Miley, George.....	68 84	75 00		143 84
52939	Merchant, William.....	10 15	75 00	\$50 00	135 15
53886	Moore, William.....	12 53	200 00		212 53
53998	Mott, James.....	67 75	200 00		267 75
56223	Mitchell, Charles.....	120 12	33 33		153 45
56529	Mohney, David.....	102 88			102 88
56635	March, Jacob.....		220 00		220 00
56936	Marshall, James M.....		100 00		100 00
56937	Maddox, Samuel F.....	16 00	100 00		116 00
56948	Morgan, Thomas E.....			100 00	100 00
57253	Monroe, F. LeBaron.....	23 25			23 25
57370	Myers, Andrew McD.....	111 19	100 00	100 00	311 19
57432	Morrison, James R.....	24 40			24 40
57556	Morrison, James A.....		66 64	100 00	166 64
57579	Maze, James H.....		40 00		40 00
57756	Morton, Francis R.....	195 84			195 84
57766	Murray, Lafayette.....	46 30			46 30
57842	Miller, John.....		100 00		100 00
58155	Morton, George.....	76 54	100 00		176 54
58159	Mumman, Zeno W.....	157 12	75 00		232 12
58161	Mushrush, William.....	21 98			21 98
58296	Millthaler, Charles.....		100 00	100 00	200 00
58338	Mathews, Albert.....		75 00		75 00
58368	Montegriffo, Agostino.....			100 00	100 00
58369	Minkler, Jesse D.....	14 64	100 00		114 64
58382	Matthews, Robert.....		90 00		90 00
58383	do.....		10 00		10 00
58441	Maxwell, Thomas H.....	23 14			23 14
58575	Murray, James C.....	138 73			138 73
58579	Magill, William M.....	247 74			247 74
58587	Mills, Horace F.....	156 36			156 36
58721	Matthews, Robert P.....	177 90			177 90
58724	Marvin, Philip O.....	5 83		50 00	55 83
58778	Martin Charles.....	177 69			177 69
58783	Mullan, Henry C.....	118 21			118 21
58788	Mitchell, George H.....	197 47			197 47
58956	Madden, Nelson.....	34 16	50 00		84 16
58960	Morris, Adrian.....	5 31			5 31
58971	Monroe, William Y.....	50 21			50 21
59094	Miller, Ignatz.....	179 58	100 00		279 58
59110	Moore, William R.....	185 58			185 58
59229	Moyers, Jacob.....	136 38	200 00		336 38
59333	Mangan, Michael.....	38 15		50 00	88 15
59343	Miller, Oliver.....	97 66	95 00		192 66
59437	Morris, John C.....	7 75			7 75
59438	Mercer, John D.....	126 17			126 17
59473	Monroe, James, 1st.....	12 15	100 00	50 00	162 15
59479	Martin Samuel.....	39 61	100 00	100 00	239 61
59480	do.....	10 00			10 00
59583	Maloney, John Q.....	111 47	75 00	50 00	236 47
59717	Mason, Pethnel.....	225 69			225 69
59722	Mercer, William M.....	88 44			88 44
59725	Miller, Harvey H.....		100 00		100 00
59772	Main, James H.....	6 90	100 00		106 90
49773	Mulford, Nelson.....	24 00	275 00		299 00
59790	Miller, Nicholas W.....		25 00		25 00
59838	Moran, John.....	11 39			11 39
59841	Martin, William.....	115 95	55 00		170 95
59842	Magee, Marshall.....		100 00	50 00	150 00
59849	Maguire, John.....	62 47			62 47
59872	Morrell, Henry W.....		100 00		100 00
59875	Moore, William.....		100 00		100 00
59877	Martin, William.....		190 00		190 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
59894	Murphy, Joseph L	\$17 86			\$17 86
60234	Montague, Calvin S	78 78			78 78
60237	Metcalf, Irwin J	6 60			6 60
60252	Miller, Michael		\$100 00		100 00
60481	Micha, Henry	49 68			49 68
60599	Maloney, William		100 00		100 00
60602	Martin, Elias		100 00		100 00
60607	Mendenhall, Nathan H.	223 98			223 98
60788	Moran, Michael	84 60			84 60
60868	Moran, Frank E.		100 00		100 00
61903	Marks, Samuel B	75 45			75 45
62098	Mackey, Thomas B.	226 00			226 00
62101	Moore, Robert S.	129 26			129 26
62103	Moran, John B	184 10			184 10
62108	Murray, John			\$100 00	100 00
62184	Mauderbach, B. F.	362 77			362 77
62197	Moorman, Henry	10 33	100 00		110 33
62259	Middleton, William N	16 67			16 67
62261	Miller, John K	66 02			66 02
62419	Moffat, Alexander		100 00		100 00
62606	Murphy, William A. E	28 00			28 00
62662	Madden, James A		92 53		92 53
62663	do	3 53	7 47		11 00
62698	Messemer, Casper	55 70			55 70
62701	Myer, Leo	64 02	20 00		84 02
62788	Miller, William H		100 00		100 00
62813	Mott, Frank	82 95			82 95
62824	Mills, James J.	270 13			270 13
62833	Morris, Lemuel	181 89	100 00		281 89
62853	Moore, Andrew J	36 89	33 33		70 22
62993	Meyer, Christian	1 96	100 00		101 96
63049	Morse, John T			100 00	100 00
63241	Massey, James		190 00		190 00
63242	do		10 00		10 00
63244	Mason, Samuel	90 05	100 00	100 00	290 05
63245	do	10 00			10 00
63274	Malkson, George		100 00	100 00	200 00
63277	Mountfort, William		100 00		100 00
63281	Murnane, Thomas		100 00		100 00
63286	Maitland, Joseph	62 86	15 00		77 86
63288	Mitchell, Joseph L.		200 00		200 00
63299	Morrow, Richard		100 00		100 00
63312	Mobley, Thomas		160 00		160 00
63496	Matha, Joseph	51 56			51 56
63520	Morgan, John		50 00		50 00
63521	Malone, Lawrence H		200 00		200 00
63684	Myers, Jerry	229 83	100 00	100 00	429 83
63742	Moore, Wilson B	38 13			38 13
63749	Merriman, Clark S	58 52			58 52
63770	Merritt, Miles		180 00		180 00
63850	Miller, Collins		68 72	42 00	110 72
64231	do		10 00		10 00
63853	Merten, Frederick		25 00		25 00
63864	Miller, John H		85 00		85 00
63868	Miller, Jacob		15 00		15 00
63905	May, Robert C	224 79	100 00	50 00	374 79
63911	Meeks, John A	34 17	150 00		184 17
63960	Matterson, Orlando	41 63			41 63
63964	Meacham, John F	59 77			59 77
63966	Moore, Samuel	596 13			596 13
63967	Mefford, Eli	58 93			58 93
64014	Mennecke, William		100 00		100 00
64015	Moore, Charles A	31 97			31 97
64017	Martin, Warren		100 00	100 00	200 00
64023	Mitchell, John	15 22	75 00		90 22
64026	Marvin, Joseph T		100 00		100 00
64027	Milliken, John A		75 00		75 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
64028	Murray, Charles M		\$100 00		\$100 00
64031	Macy, William W	\$151 70	100 00		251 70
64037	Miller, John	17 00			17 00
64042	Miller, William H	52 28			52 28
64099	Mead, Sylvester E		100 00		100 00
64236	Martin, Isaac		58 15		58 15
64255	Musick, Lewis S		100 00	\$100 00	200 00
64258	Meyer, Moritz		100 00	100 00	200 00
64264	Meyer, Joh	6 05			6 05
64274	Merrill, Samuel	30 14			30 14
64323	Maxwell, John		93 48		93 48
64358	Mundy, John J		135 00		135 00
64363	Montgomery, James B		100 00		100 00
64395	Mills, Allen W		100 00		100 00
64396	Milliron, Joseph	101 48	133 33		234 81
64397	Murray, Thomas H	53 66			53 66
64401	Miller, David	64 20	15 00		79 20
64409	Marsh, Thomas		100 00		100 00
64412	Moore, Robert M			100 00	100 00
64420	Maner (or Mehner), Joseph		235 00		235 00
64434	Mains, John	11 87	100 00	50 00	161 87
64484	Medlin, Clark A		140 00		140 00
64585	Morrison, Samuel H		100 00		100 00
64586	Marsh, George W	18 48			18 48
64716	Mulliken, Samuel S		25 00		25 00
64722	Manning, James W		100 00		100 00
64892	Martin, Miner	90	25 00		25 90
64893	do	6 00			6 00
64940	Meyer, Bernard	4 95			4 95
64942	Miller, John G		100 00	100 00	200 00
64971	Marshall, George	103 61			103 61
64975	Milholland, Thomas J	55 80			55 80
64985	Miller, Harmon L	24 42	100 00		124 42
65016	Myers, Nelson		190 00		190 00
65017	do		10 00		10 00
65146	Mudgett, Gilman C	150 60			150 60
65347	Maxwell, John	40 88			40 88
65656	Morton, Howard		100 00		100 00
65674	Maupin, alias McGuire, Ryland	25 00	33 33		58 33
65675	do	9 50			9 50
65941	Mallison, James			100 00	100 00
66555	Monroe, James		75 00		75 00
66637	Meserole, Nicholas W		100 00		100 00
66641	Menard, John	11 57			11 57
66644	Murphey, William F	45 93			45 93
66683	Magruder (or McGruder), James		100 00		100 00
66744	Mounce, Smith	14 29			14 29
66746	Maher, Michael J			50 00	50 00
66749	Miller, William P	30 57			30 57
66911	Maze, A. B		100 00		100 00
66915	Meyer, Henry, or Heinrich Minger		100 00		100 00
66948	Morgan, Patrick	50 70	100 00		150 70
56290	Mattox, William	85 90			85 90
58162	Mitchell, George H	66 18			66 18
59582	Malone, John H		100 00	43 14	143 14
66646	Mehaffie, Andrew	68 39	25 00		93 39
30469	Moore, Solomon		240 00		240 00
67712	Miles (or Mills), John		45 00		45 00
67713	do		5 00		5 00
67592	Moore, Joseph		75 00		75 00
67158	Meyers, William	23 47			23 47
6739	Moore & Co., W. H. (W. H. Moore, surviving partner), owners of paymaster's check.	12 31			12 31
50595	McClerg, Josiah	53 56			53 56
55740	McCue, James	90 96	25 00		115 96
56933	McWilliams, John		100 00		100 00
57369	McIntee (McIntyre), Arthur		100 00	100 00	200 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
57450	McMurtry, William A	\$46 90			\$46 90
57597	McWethy, Melancthon	10 68	.....	.....	10 68
58019	McCafferty, Thomas .....	.....	\$100 00	.....	100 00
58165	McCormick, John T .....	.....	100 00	\$100 00	200 00
58185	McIntire, Peter	90 95	.....	.....	90 95
58186	do	7 50	.....	.....	7 50
58297	McNally, Anthony .....	.....	25 00	.....	25 00
58384	McLain, Andy, alias Andy Parker	38 22	100 00	.....	138 22
58385	do	10 00	.....	.....	10 00
58457	McDonald, John, alias John Bowers .....	.....	100 00	100 00	200 00
58585	McCaleb, David L	46 81	.....	.....	46 81
58654	McReynolds, Jonathan C .....	.....	100 00	100 00	200 00
58667	McMillan, William F	91 56	.....	.....	91 56
58780	McManus, Isaac	606 00	.....	.....	606 00
58955	McCann, William .....	.....	100 00	.....	100 00
59103	McKinsey, Mordecai .....	.....	100 00	.....	100 00
59161	McConnell, David .....	.....	100 00	.....	100 00
59213	McCormick, Stewart	4 88	25 00	.....	29 88
59221	McClellan, George W	66 10	100 00	100 00	266 10
59226	McMillen, James T .....	.....	100 00	.....	100 00
59227	McCall, James	22 97	100 00	.....	122 97
59461	McCormick, Michael	254 10	.....	.....	254 10
59642	McNally, John H .....	.....	100 00	.....	100 00
59785	McKoon, Morgan L	174 23	55 00	.....	229 23
59844	McNeill, Martin, alias Wallace McKenny ..	4 51	100 00	.....	104 51
59892	McChesney, James P	101 41	.....	.....	101 41
60154	McCoy, Harrison	18 26	100 00	.....	118 26
60155	do	10 00	.....	.....	10 00
60211	McMillan, John W	15 87	.....	.....	15 87
60213	McTigue (or McTighe), Michael	13 00	100 00	.....	113 00
60221	McAnallen, James P .....	.....	100 00	100 00	200 00
60592	McCall, John	37 26	100 00	.....	137 26
61340	McNew, John O .....	.....	100 00	.....	100 00
61852	McAllister, George W .....	.....	8 34	.....	8 34
61853	McHenry, David W	115 22	100 00	50 00	265 22
61900	McKee, J. Harvey	179 02	.....	50 00	229 02
61976	McNamara, Christopher	28 80	15 00	.....	43 80
62094	McCloud, Jacob	93 10	100 00	.....	193 10
62182	McKenzie, John W	25 75	.....	.....	25 75
62272	McRobins, William	30 75	.....	.....	30 75
62604	McDonald, Minard	42 83	.....	.....	42 83
62699	McKee, Daniel	236 35	100 00	.....	336 35
62782	McClung, Charles A .....	.....	100 00	.....	100 00
63279	McCabe, Patrick	61 77	.....	.....	61 77
63374	McCain, Alexander .....	.....	100 00	.....	100 00
63470	McFarland, Edwin C .....	.....	100 00	.....	100 00
63505	McFadden, Michael .....	.....	165 00	.....	165 00
63746	McCollum, Alfred	39 97	.....	.....	39 97
63752	McHolland, David A	532 36	.....	.....	532 36
63757	McGovern, Michael	10 93	.....	.....	10 93
63894	McMahon, James	8 74	60 00	.....	68 74
63957	McCully, John H., alias Richard Dobbins ..	55 32	.....	.....	55 32
64030	McGonigle, Hugh .....	.....	100 00	.....	100 00
64048	McNaught, Thomas A	128 48	.....	.....	128 48
64257	McCauley, Jacob	23 34	.....	.....	23 34
64365	McMaster, William L .....	.....	100 00	.....	100 00
64398	McGee, William	81 99	.....	.....	81 99
64580	McCleary, John D	131 57	.....	.....	131 57
64706	McCarty, Cicero .....	.....	100 00	50 00	150 00
64727	McNees, David C .....	.....	100 00	.....	100 00
65029	McGee, Dennis	61 37	.....	.....	61 37
65030	do	7 50	.....	.....	7 50
65119	McLain, John S .....	.....	100 00	.....	100 00
65337	McWethy, John	3 44	.....	.....	3 44
65953	McCabe, Simon	53 34	15 00	.....	68 34
66065	McComber, Alexander	10 63	15 00	.....	25 63
66814	McElwee, James	4 52	100 00		104 52

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66560	McClellan, James K. P.		\$120 00		\$120 00
66645	McNair, Robert N	\$9 52	95 00		104 52
66914	McFadyen, David		100 00		100 00
67152	McLellan, John		100 00		100 00
67351	McMahon, John	66 20	125 00		191 20
67795	McMillan, Alexander F	133 00			133 00
65674	McGuire, Ryland. (See Ryland Maupin.)				
66683	McGruder, James. (See Magruder.)				
56807	McAuliffe, M. (See Michael Sheehan.)				
51173	Noyes, Freeman S	144 86			144 86
57717	North, Charles		100 00		100 00
58184	Nolin, Lewis, alias Louis Noles	30 80	100 00	\$100 00	230 80
58455	Neill, William A		100 00	100 00	200 00
58463	Nevergold, Henry	93 90	240 00		333 90
58763	Nall, Alfred T	44 79			44 79
58962	Narrid (Nard), Joseph I	29 48			29 48
59211	Nolan, James H	39 00			39 00
59787	Northrop, Henry H	33 59			33 59
60223	Nolan, Thomas	20 37	75 00		95 37
60226	Noyes, Nathan		100 00		100 00
60543	Nally, Butler		94 21		94 21
60544	do	4 21	5 79		10 00
60726	Nichols, Elijah		100 00		100 00
60804	Nixon, Miles S	23 93			23 93
62258	Northcott, Benjamin F	30 00			30 00
62292	Noteman, Darius	259 00			259 00
62300	Neer, Milton	55 40			55 40
62415	Nutting, Henry W. G		100 00		100 00
62506	Nixon, Joseph H		200 00		200 00
62659	Neil, Henry	2 46	155 00		157 46
62859	Norwood, Cyrus	26 87			26 87
62866	Nash, Francis J			100 00	100 00
63603	Nickel, William	34 81			34 81
63887	Newbert, Ambrose, alias Jas. Burke	145 98	100 00		245 98
64098	Newton, Julius C		100 00		100 00
64229	Neville, Timothy F	298 05			298 05
64245	Nutter, Joseph	91 47	100 00		191 47
64246	do	10 00			10 00
64261	Napier, Stephen	55 65	100 00		155 65
64269	Niederer, Gustav		100 00		100 00
64313	Norman, Joseph M		33 34		33 34
64403	Nye, John A		100 00		100 00
65053	Nichols, William R	34 23	100 00		134 23
65066	Nicor, Edwin		100 00		100 00
65339	Nogle, John H		33 33		33 33
65865	Nunemaker, Jacob			89 92	89 92
65884	Nowland, Edwin A	9 62			9 62
66222	Newcomb, Oliver		100 00		100 00
66425	Nettleton, Daniel W	181 04	100 00		281 04
66439	Nesbit, James	199 50			199 50
56289	Null, Joseph B	60 85	180 00		240 85
64284	Newton, John C	34 51			34 51
65250	Newell, Velouris		100 00	50 00	150 00
67154	Nickerson, Eugene		100 00		100 00
66446	Nutter, Calvin	102 70	33 33		136 03
645024	Owens, Thomas J	55 46	75 00		130 46
29425	Owens, James	29 34	200 00		229 34
49656	Owen, Calvin	10 50			10 50
58590	Olney, George W	46 25			46 25
58989	O'Connor, Hiram	11 64			11 64
59352	O'Donohue, Timothy	12 35			12 35
59457	Osmers, Bruno		100 00		100 00
59475	Orfurd (or Offert), George	9 05	100 00	100 00	209 05
59476	do	10 00			10 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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		Pay of two and three year volunteers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
59978	O'Hair, Houston		\$100 00	\$50 00	\$150 00
60219	O'Neill, Rodger		100 00	100 00	200 00
62676	O'Connor, Francis M.	\$46 13	75 00		121 13
63005	Owen, Sherman W.	4 39	100 00	50 00	154 39
63464	O'Brian, Timothy	14 99	40 00		54 99
63877	Osborn, Marshall	115 53	125 00		240 53
63901	O'Brien, Timothy	40 37			40 37
64169	Odell Dyckman		100 00		100 00
64220	Osbon, George W.	16 09			16 09
64237	Oldham, Dock	36 85	100 00		136 85
64238	do	11 00			11 00
64262	Overman, James L.		100 00	100 00	200 00
64315	O'Neal, Patrick		33 34		33 34
64428	Owens, Benjamin O.	15 54	33 33		48 87
65131	Orndorff, Thomas L.	83 60			83 60
66640	Orrick, Joseph		100 00		100 00
62297	Otis, Norman L.	83 99			83 99
66382	Odell, Henry	16 59			16 59
66648	Oleson, Rasmus		300 00		300 00
67132	Orcutt, Edwin C. W.	63 87	25 00		88 87
14418	Picon, Terence	24 01			24 01
49747	Payne, Thomas J.	146 41			146 41
50384	Pearson, Henry		263 54		263 54
51414	Pettis, Tolliver		190 00		190 00
53988	do		10 00		10 00
52177	Prater, William		75 00	50 00	125 00
52342	Price, Isaiah	98 30			98 30
54237	Pernell, Jenkins		2 50		2 50
55758	Pursel, William	387 87	100 00		487 87
57132	Pinkham, Thomas B.		100 00	100 00	200 00
57405	Porter, Robert	78 26			78 26
58026	Palmer, Charles R.		160 00		160 00
58363	Peeler, Charles		165 00		165 00
58364	Pearce, Christopher T.	172 10			172 10
58434	Parcher, Lyman	83 13			83 13
58572	Phelfrey, James W.	80 13	100 00		180 13
58669	Pinkston, Lewis L.	123 48			123 48
58754	Powers, William		100 00		100 00
58765	Plumlee, William W.	10 53	100 00		110 53
58782	Pepper, John C.	89 28			89 28
58785	Parker, Justin N.	107 30			107 30
58895	Pennypacker, Galusha.	33 60			33 66
58953	Phillips, Spencer	9 81	25 00		34 81
59154	Pettis, Frederick		100 00		100 00
59216	Peifer, Louis J.	117 59			117 59
59217	Pontious, George W.		375 00		375 00
59348	Packard, James B.		100 00		100 00
59353	Pomeroy, Lewis S.	42 57	35 00		77 57
59357	Packard, George P.		100 00		100 00
59358	Proctor, Amos J.		25 00		25 00
59362	Perry, Charles C.	122 39			122 39
59368	Parson, John		25 00		25 00
59436	Parks, Benjamin T.	357 29			357 29
59724	Platter, John A.	146 56			146 56
59727	Potter, Talbert D.	11 05			11 05
59728	Penny, Elijah W.	73 64			73 64
59789	Perrott, John	10 56			10 56
59811	Pierce, Daniel H.	30 37			30 37
59850	Pierce, Frank	105 83	15 00		120 83
59889	Parks, John A.			100 00	100 00
60217	Patterson, John T.	70 74			70 74
60269	Pysher, Stephen G.		100 00	100 00	200 00
60472	Parker, John F.	72 55			72 55
60489	Pier, Colwert K.	77 81			77 81
60575	Parr, Samuel B.		169 02		169 02
60600	Pippin, Barnett M.		100 00		100 00
60606	Poulson, Andrew J.	25 67			25 67

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
60780	Powell, John F. M.	\$3 55	\$33 33		\$36 88
60808	Phillips, James H.			\$100 00	100 00
60851	Pinkerton, Hugh		75 00		75 00
61335	Pike, William H.		100 00		100 00
61870	Pestell, John	2 75			2 75
61895	Perry, Alexander R.	16 15	15 00		31 15
61897	Palmer, James P.		70 00		70 00
61986	Pfost, William	15 17			15 17
62181	Pierce, David	14 30			14 30
62251	Patten, James R.	54 28			54 28
62268	Partridge, William H.		100 00		100 00
62275	Perry, Ebenezer P.		100 00		100 00
62294	Pasha, Angelo	51 03	25 00		76 03
62207	Plumly, M. W.		100 00		100 00
62309	Pirkin, Frederick	13 61	200 00		213 61
62603	Pierce, Elisha	52 17	210 00		262 17
62840	Putnam, David E.	71 25			71 25
62848	Pence, Peter	20 44			20 44
63050	Powell, William R.			50 00	50 00
63152	Price, William P.	30 83			30 83
63167	Pyers, Stephen		100 00		100 00
63212	Phillips, Calvin B.		100 00	100 00	200 00
63213	Putnam, Samuel A.		100 00	100 00	200 00
63214	Patterson, Frank G.		100 00		100 00
63217	Pierce, Joseph	63 00	95 00		158 00
63223	Parker, Matthew W.		100 00		100 00
63238	Pilgrim, Simon V.	260 33			260 33
63371	Poe, Charles N.		105 71		105 71
63653	Proctor, Sidney		100 00	100 00	200 00
63738	Potts, Jonas		73 61		73 61
63890	Paul, James	80 44	33 33		113 77
63903	Perkins, Joshua	53 86	100 00		153 86
63965	Porter, Samuel D.	141 28			141 28
63988	Poor, Washington		100 00		100 00
64001	Pitcher, Menzo A.			50 00	50 00
64102	Pierce, Samuel W.		100 00		100 00
64107	Peacock, Smith J.			100 00	100 00
64152	Pearsall, Henry		100 00		100 00
64217	Perkins, Hiram E.	61 10			61 10
64223	Parmelee, Uriah N.	125 37	35 00		160 37
64252	Potter, John		100 00	100 00	200 00
64329	Perkins, Spencer			98 49	98 49
64354	Peine, Gustavus		100 00		100 00
64362	Pegg, Thomas	39 53	80 00		119 53
64364	Pratt, Richard		100 00	100 00	200 00
64415	Proctor, Joseph			100 00	100 00
64417	Pickett, Julius W.	374 08			374 08
64479	Platt, Frederick C.		100 00	100 00	200 00
64489	Parks, Orson L.		100 00		100 00
64577	Pearsall, Uri B.		100 00		100 00
64578	Phenn, William		160 00		160 00
64589	Plymesser, Samuel J.	291 00			291 00
64943	Parker, Henry		100 00		100 00
64978	Phillips, Nathan	90 07	55 00		145 07
65025	Pryor, Benjamin	32 20			32 20
65026	do.	5 00			5 00
65027	Phillips, George		100 00		100 00
65058	Poff, Reuben		100 00	100 00	200 00
65135	Phemister, Silas G.	5 30			5 30
65683	Poppleton, Oscar O.	127 60			127 60
65740	Patterson, Robert H.	115 62	25 00		140 62
65744	Price, James R.		25 00	100 00	125 00
65857	Poland, Robert M.	18 15	100 00		118 15
65947	Piles, William		100 00		100 00
66063	Paull, William W.	35 96	25 00		60 96
66279	Payne, Granville		200 00		200 00
66745	Pickens, Alvin	64 13			64 13

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66924	Perkins, Austin A.....	\$33 37	\$100 00	\$100 00	\$233 37
67777	Potter, George W., jr.....		100 00		100 00
58384	Parker, Andy. (See McLain.)				
55750	Quirk, John.....	32 93			32 93
58982	Quinn, John E.....	9 19			9 19
60480	Quick, Jacob.....		75 00		75 00
64160	Quinn, Hugh.....	99 28			99 28
65939	Quitow, Augustus.....		100 00		100 00
66282	Quint, Samuel T.....	4 19			4 19
60802	Robins, Mathew. (See Delaney.)				
7862	Rose, Moses.....		260 00		260 00
10437	Reed, Henry H.....	81 00			81 00
24034	Ross, John P.....	330 49			330 49
31892	Robinson, Thaddens.....		25 00		25 00
41073	Robinson, William H.....	234 50	125 00		359 50
44782	Rogers, Leroy S.....		35 00		35 00
52839	Riggs, Charles R.....		100 00	50 00	150 00
53411	Runyon, Calvary.....		95 00		95 00
56522	Rouse, Oliver G.....	192 56			192 56
56524	Robertson, Samuel B.....	119 32	85 00		204 32
56530	Robinson, John J.....	153 80			153 80
57248	Rorer, Jonathan T.....	253 57			253 57
57605	Robbins, Thomas.....		15 00		15 00
57610	Roblyer, Jacob H.....		100 00		100 00
57719	Robson, David.....	34 32			34 32
57836	Raible, Jacob.....		75 00		75 00
57844	Richards, Henry, jr.....	3 24			3 24
58292	Riddle, James.....	108 80			108 80
58305	Reynolds, Charles S.....		100 00	100 00	200 00
58551	Reel (or Reed), John.....		150 00		150 00
58713	Robinson, Moses B.....		75 00		75 00
58714	Ryan, William.....		46 40		46 40
58759	Rue, Archibald B.....	341 14			341 14
58764	Robbins, John W.....	21 93			21 93
58772	Ryan, Patrick M.....	13 60			13 60
58984	Ramsay, Winfield S.....	169 68		50 00	219 68
59097	Roach, James T.....		100 00	100 00	200 00
59162	Redmond, Reuben W.....		100 00		100 00
59215	Robinson, Joseph.....		100 00		100 00
59222	Rehr, Lewis.....	32 27			32 27
59223	Redic, Oliver C.....	146 49			146 49
59279	Randall, Isaac.....	34 39			34 39
59280	do.....	8 00			8 00
59337	Rahm, William.....	258 00			258 00
59338	Ream, David K.....		45 00		45 00
59350	Root, Mortimer.....		66 66		66 66
59445	Riddell, Royal W.....	451 76			451 76
59462	Reily, Martin.....		50 00		50 00
59572	Reynolds, Benjamin.....	71 57			71 57
59573	do.....	8 50			8 50
59587	Rosenholm, John.....	58 44	100 00	50 00	208 44
59590	Rudd, John.....	97 60			97 60
59721	Rifle, John S.....	180 54			180 54
59723	Rigdon, Joseph W.....	694 81			694 81
59729	Rhodes, Elisha H.....		100 00		100 00
59730	Ripple, Adam.....		100 00	100 00	200 00
59776	Robinson, Wesley L.....		100 00		100 00
59788	Rossmann, John A.....		75 00	100 00	175 00
59820	Russell, James A.....	103 21			103 21
59826	Rohr, George W.....	29 53			29 53
59830	Richards, John B.....	21 44			21 44
59876	Rich, Harrison.....	79 50	80 00		159 50
60214	Riggs, Clisby D.....	35 83			35 83
60227	Reak, Mathaw.....	6 45			6 45
60229	Roberts, Absalom.....	27 19	170 00		197 19
60230	Reynolds, James R.....		40 00		40 00
60261	Rogers, Jonathan.....	89 80	25 00		114 80

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
60265	Reising, Conrad		\$100 00	\$100 00	\$200 00
60425	Reat, James L.	\$43 69			43 69
60485	Robinson, Stephen E		100 00		100 00
60486	Rhodes, Henry W.		40 00		40 00
60783	Rodifer, Andrew J	109 85			109 85
60787	Russell, John J	56 92	100 00		156 92
60790	Richmond, Frank	49 50			49 50
60888	Riggs, Samuel R	381 47			381 47
61331	Rush, Iredell B.	18 64			18 64
61332	Ramage, Moses		100 00		100 00
61348	Roberts, John	32 06			32 06
61350	Ross, John	52 53			52 53
61745	Ringelstein, Augustus			50 00	50 00
61854	Rutledge, Hillery C		114 02		114 02
61899	Rigg, Thomas J	76 69			76 69
62180	Reber, Samuel F		96 91		96 91
62192	Ranson, Louis	8 83			8 83
62257	Reno, John L	368 50			368 50
62273	Richards, Joseph R		70 99		70 99
62287	Rogers, Earl M		100 00		100 00
62305	Roberts, William E. M	52 80	100 00	100 00	252 80
62412	Robertson, Edwin	41 03			41 03
62517	Reid, John G	285 05			285 05
62521	Rainsey, William	26 55			26 55
62684	Rucker, Richard M	197 80			197 80
62687	Reese, Florian	88 67			88 67
62694	Reynolds, James K		100 00		100 00
62772	Richardson, Elisha S	31 53	200 00		231 53
62776	Ryno, John	62 25	75 00		137 25
62814	Robinson, Lewis		175 00		175 00
62851	Reiff, Blasius	64 47			64 47
63158	Rahm, Jacob	45 00	75 00	50 00	170 00
63160	Reynolds, Michael	27 63	15 00		42 63
63239	Raglan, Henry	48 82	100 00		148 82
63240	do	10 00			10 00
63282	Richards, Lewis D	9 53			9 53
63283	Reece, Ephraim		100 00	100 00	200 00
63284	Ransom, William A		100 00	100 00	200 00
63289	Ralston, John		75 00		75 00
63290	Richardson, George H	16 10	55 00		71 10
63315	Rauber, Nicholas	113 21			113 21
63324	Roberts, Edward R	29 77			29 77
63379	Rupp, John		100 00	100 00	200 00
63455	Ryan, Timothy	14 21	15 00		29 21
63463	Roney, Thomas J		100 00		100 00
63491	Rogers, William	128 25			128 25
63495	Reisdorf, Benjamin	154 79			154 79
63596	Richards, Newton	197 31			197 31
63607	Rodman, Martin	145 23	100 00		245 23
63659	Rowland, John W	25 57			25 57
63678	Robinson, William	2 23	100 00		102 23
63679	do	10 50			10 50
63751	Renfrow, David			100 00	100 00
63843	Richardson, Richard	36 19	100 00		136 19
63844	do	10 00			10 00
63847	Ricks, Andrew	86 78	100 00	100 00	286 78
63874	Rardin, John C	47 51			47 51
63891	Russell, Hiram	114 40			114 40
63913	Redman, William R		10 51		10 51
63930	Ryan, David	18 80			18 80
64033	Riggle, Garrett E	167 75	100 00		267 75
64036	Reese, William P	192 76		50 00	242 76
64039	Richardson, Harland	953 64			953 64
64041	Reid, Benton A	160 37			160 37
64046	Ross, Alexander B	53 53			53 53
64064	Randall, William	25 06	300 00		325 06
64065	do	10 00			10 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
64069	Randolph, Lewis.....	\$16 90	\$100 00		\$116 90
64167	Robinson, William M.....		100 00		100 00
64232	Russell, Goodwin.....		90 00		90 00
64233	do.....		10 00		10 00
64268	Reisner, George.....		100 00		100 00
64270	Rohlfing, Henry.....		100 00		100 00
64271	Rice, Daniel B.....	73 05			73 05
64273	Reynolds, Charles M.....			\$50 00	50 00
64370	Ratliff, Eli.....	16 53			16 53
64391	Roberts, Thomas E.....	24 24	33 33		57 57
64393	Rowland, Henry C.....	113 92			113 92
64402	Raleigh, Elijah W.....		100 00		100 00
64405	Reynolds, S. Walter.....		100 00	50 00	150 00
64406	Reuter, Carl.....	47 08			47 08
64448	Ross, John A.....	158 97			158 97
64477	Rathburn, Charles W.....	113 40	25 00		138 40
64573	Raymond, Seth.....			50 00	50 00
64693	Redfern (or Readfearn) Richard.....		100 00		100 00
64941	Rollins, Sidney C.....	77 25	55 00		132 25
64974	Robb, Albert G.....	41 00			41 00
64980	Rankin, John R.....	216 03			216 03
65026	Richardson, Albert.....	32 96	300 00		332 96
65021	do.....	10 00			10 00
65148	Reed, Seth G.....		100 00		100 00
65348	Reading, John.....	64 77			64 77
65668	Russell, Andrew P.....		100 00		100 00
65718	Roberts, Joseph B.....			50 00	50 00
65742	Reed, Phineas.....	17 33			17 33
65854	Reilly, Lewis H.....		100 00		100 00
65861	Rowley, Charles A.....	71 46	75 00		146 46
65873	Rathburn, John R.....	83 32	25 00		108 32
65879	Rodgers, George.....	105 84	120 00		225 84
65934	Rood, Charles H.....	218 02	75 00	100 00	393 02
66062	Richards, Horace H.....	124 19			124 19
66252	Rose, Norman C.....			50 00	50 00
66256	Reed, Jonathan Y.....		175 00		175 00
66358	Reason, Alexander J.....		100 00		100 00
66359	Reynolds, William.....		100 00		100 00
66413	Ryan, William A.....	37 35			37 35
66414	Richardson, Harley R.....	382 12			382 12
66431	Reed, Thomas B.....		100 00		100 00
66554	Rath, John.....		25 00		25 00
66582	Reynolds, Stephen H.....	73 61			73 61
66635	Reel, Henry C.....			50 00	50 00
66638	Roundey, George A.....	48 93			48 93
66639	Raffen, James W.....		100 00		100 00
66680	Roberts, William C.....	60 31	100 00	50 00	210 31
66681	do.....	10 00			10 00
67280	Rarick, Abraham C.....		100 00		100 00
67234	Raymond, George F.....	52 39	75 00		127 39
63906	Remiatte, Louis.....	38 85			38 85
66374	Redman, Phrisbie.....	63 16	100 00		163 16
66375	do.....	13 00			13 00
66643	Rhodes, Omar T.....		100 00		100 00
66448	Ritter, John T.....		75 00		75 00
66951	Robbins, James C.....	149 80			149 80
66775	Richardson, William J.....		100 00		100 00
67276	Rowsey, Lafayette.....	73 64	15 00		88 64
13605	Scheirer, Irwin.....	96 65	75 00		171 65
24760	Shuey, Daniel.....	35 97	15 00		50 97
24919	Shoemaker, William.....		66 67		66 67
37578	Sayes (or Sells), Snow.....	10 85			10 85
44146	Standafer, Samuel.....		25 00		25 00
52482	Styron, John L.....	627 45			627 45
53227	Smith, Benjamin F.....	60 70			60 70
54190	Seaborn, Thomas.....	48 00	175 00		223 00
54740	Smith, John M.....			50 00	50 00

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
55917½	Scotten, William.....	\$10 00			\$10 00
56807	Sheehan, Michael, alias M. McAuliffe.....	9 66	\$25 00		34 66
56939	Selden, Gideon.....		100 00		100 00
56943	Shine, John.....		100 00	\$100 00	200 00
56945	Shelley, Frederick J.....			50 00	50 00
56946	Schmidt, Christian.....		100 00	100 00	200 00
56947	Sampson, Joseph N.....	35 59			35 59
56949	Stevenson, Hiram M.....	26 00			26 00
57362	Schrimscher, George.....	13 68	96 00		109 68
57441	Starkweather, Clark C.....	378 76			378 76
57447	Swan, William S.....	287 95			287 95
57562	Sharp, Felix G.....	71 56			71 56
57565	Sisson, George M.....	208 60			208 60
57567	Stretch, John J.....		75 00		75 00
57590	Savage, James G.....			50 00	50 00
57720	Sankey, J. Asher.....	37 34			37 34
57727	Swingley, Oliver H.....	24 40			24 40
57759	Sloan, Norman.....		100 00		100 00
57762	Somers, Amos C.....		25 00		25 00
57785	Schaefer, John.....		100 00		100 00
58373	Smith, Marshall.....		290 00		290 00
58374	do.....		10 00		10 00
58438	Sharp, Oliver.....	25 47			25 47
58469	Smith, Frederick.....	48 75			48 75
58556	Simpson, George.....	28 63	155 00		183 63
58557	do.....	10 00			10 00
58558	Salmond, George.....	84 92	80 00		164 92
58580	Sladen, Joseph A.....	110 03			110 03
58589	Stone, Henry A.....	159 82			159 82
58657	Smith, John J.....		100 00		100 00
58711	Sponhower, Benjamin F.....			50 00	50 00
58719	Seeger, Joseph.....		200 00		200 00
58725	Schwendinger, Sebastian.....			100 00	100 00
58757	Smith, Joseph M.....	23 65			23 65
58777	Stickel, Lewis R.....	407 96			407 96
58900	Scholes, Joseph T.....	32 96	55 00		87 96
58903	Smith, Nathan A. C.....	104 04			104 04
58974	Sheridan, Millard J.....	79 00			79 00
58983	Smith, Andrew.....	68 29			68 29
58986	Smith, Clement D.....	66 74			66 74
58990	Spitler, Marion L.....	39 45			39 45
59072	Simmons, Moses.....		28 34		28 34
59073	do.....		5 00		5 00
59084	Sizeman (or Sizemore), George.....		200 00		200 00
59106	Small, Henry A.....		100 00		100 00
59167	Sweet, William H. S.....	127 01			127 01
59224	Simpson, Frank W.....	115 69	25 00		140 69
59336	Sweet, Sylvester E.....	605 70			605 70
59355	Scott, Julian A.....		100 00		100 00
59365	Scheefers, Bernard.....		100 00		100 00
59453	Sanders, James K. P.....	28 05			28 05
59460	Stone, Harvey J.....	223 98			223 98
59469	Skillman, Philander.....	171 60			171 60
59488	Smith, William.....		94 59		94 59
59489	do.....	4 59	5 41		10 00
59586	Snider, Landon.....	87 46	75 00	50 00	212 46
59588	Stover, Martin V.....	51 89	33 33		85 22
59779	Stone, Silas W.....	12 39			12 39
59824	Stevens, Jack L.....		100 00		100 00
59827	Serles, Francis M.....	43 90			43 90
59831	Seaman, Joseph W.....	15 05			15 05
59835	Smith, Elias.....	26 13			26 13
59837	Smith, William S.....	5 50	15 00		20 50
59890	Stevens, Henry S.....	71 25	120 00		191 25
59891	Springer, Uriah.....	34 88	40 00		74 88
60170	Smith, Daniel.....		35 00		35 00
60531	do.....		5 00		5 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
60212	Shutte, C. August.....		\$25 00		\$25 00
60253	Six, Barney.....		100 00	\$100 00	200 00
60257	Spraggins, John H.....		87 77		87 77
60479	Severtson, Tosten.....	\$23 62			23 62
60525	Sloan, George T.....		200 00		200 00
60533	Saunders, Pompey.....		90 00		90 00
60534	do.....		10 00		10 00
60794	Smith, Hiram N.....	38 75			38 75
60798	Schick, Hiram.....		100 00		100 00
60809	Schlossinger, Anton.....	96 00	100 00		196 00
61301	Smith, Webster C.....		100 00		100 00
61336	Smith, John.....	27 44			27 44
61338	Swartzell, George W.....	28 60	100 00		128 60
61339	Shaffer, Samuel.....	62 40	340 00		402 40
61341	Shepherd, Alfred T.....	1 58	33 33		34 91
61860	Stuart, John J.....	66 00			66 00
61869	Schomberg, Ernst.....	5 10	100 00		105 10
61902	Sanderson, Alexander.....	8 14	100 00		108 14
62202	Stewart, Preston.....		90 70		90 70
62203	do.....	70	9 30		10 00
62253	Sherry, Bernard.....	90 21			90 21
62270	Shields, Washington M.....	65 83			65 83
62284	Scott, John W.....		100 00		100 00
62299	Scovill, Ancil M.....	50 71	75 00		125 71
62301	See, William.....	54 52	145 00		199 52
62306	Smith, Joshua V.....		200 00		200 00
62417	Searv, James F.....		100 00		100 00
62424	Smithers, Ezekiel.....		100 00		100 00
62426	Smith, Stanley L.....		100 00		100 00
62429	Settlemyre, George.....		100 00	100 00	200 00
62505	Steed, Jonas A.....			100 00	100 00
62514	Sheets, Luther.....	32 88	25 00		57 88
62599	Sowers, Isaac M.....		100 00		100 00
62605	Sweet, Franklin.....	287 91			287 91
62654	Smith, Thomas.....	30 36	100 00		130 36
62655	do.....	11 00			11 00
62664	Shaw, George.....		93 03		93 03
62665	do.....	3 53	6 97		10 50
62668	Smith, Sampson.....	84	100 00		100 84
62669	do.....	10 00			10 00
62678	Stone, Curtis B.....	16 48			16 48
62680	Shull, Benjamin F.....		150 00		150 00
62682	Smith, Frederick.....	149 15			149 15
62690	Spencer, George K.....	44 94	100 00		144 94
62691	Shideler, Isaac.....		100 00		100 00
62693	Schmidt, John B.....		100 00		100 00
62702	Sutton, George.....	5 04			5 04
62703	Schmeling, Theodore.....	336 23	240 00		576 23
62774	Short, Colby.....	41 20	25 00		66 20
62779	Senart, Charles B.....		100 00		100 00
62783	Splan, James.....	5 33	75 00		80 33
62784	Salkeld, Charles F.....		100 00		100 00
62822	Strode, Henry R.....			100 00	100 00
62841	Schoonover, James.....		160 00		160 00
62857	Sullivan, Thomas.....	244 53			244 53
62863	Salter, Alonzo L.....		25 00		25 00
63001	Suor, John J.....		100 00	50 00	150 00
63008	Sperry, Asa.....	76 35	87 50		163 85
63051	Shultz, Edward.....			100 00	100 00
63065	Spratt, John Q.....	84 10	100 00		184 10
63154	Sloan, Joseph B.....		97 15		97 15
63161	Smith, Cary A.....		210 00		210 00
63168	Strong, Samuel A.....	85 68			85 68
63236	Saunders, Sylvester.....		90 00		90 00
63237	do.....		10 00		10 00
63272	Shepard, Tracy G.....	148 14	100 00		248 14
63273	Strayhorn, Thomas D.....	12 54	20 00		32 54

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
63285	Still, William		\$25 00		\$25 00
63287	Shell, John		100 00	\$100 00	200 00
63291	Smith, Fitzhugh		96 26		96 26
63316	Sargent, Frank J.	\$43 27			43 27
63452	Shumann, William C.	12 09			12 09
63457	Sheldon, Curtis F.	21 42			21 42
63494	Stenhouse, Ebenezer	61 40			61 40
63509	Smith, Walter		54 67		54 67
63511	Swatzel, Samuel	143 44	100 00	50 00	293 44
63515	Stapleton, Nelson	38 94	100 00	50 00	188 94
63527	Smith, John C.	71 53	100 00		171 53
63584	Smith, Henry H.		100 00		100 00
63590	Sheets, James W.	106 13			106 13
63605	Stamm, Andrew N.	167 13	185 00		352 13
63608	Struve, Carl E. W.	32 02			32 02
63660	Stewart, Hiram	48 05	75 00		123 05
63667	Shofner, Charles T.	21 80	40 00		61 80
63670	Sullivan, George		75 00		75 00
63688	Sellers, Pool	56 51			56 51
63689	 do	7 50			7 50
63690	Scruggs, Milton		100 00		100 00
63748	Snider, Jonathan B.	4 39			4 39
63761	Smith, Charles B.	208 23			208 23
63764	Story, James M.	25 86			25 86
63767	Small, Abner R.	214 47	100 00		314 47
63768	Sharpe, A. B.		100 00		100 00
63845	Sales, John	9 27			9 27
63889	Shackley, Joseph H.	57 59	25 00		82 59
63914	Survis, William		100 00	100 00	200 00
63916	Stilphen, Nathan	7 86	100 00		107 86
63919	Stevens, Isalah		100 00	100 00	200 00
63924	Scribner, George W.		75 00		75 00
63927	Strickland, Moses L.		100 00		100 00
63955	Shumard, John L.	34 14			34 14
64011	Sargent, Amos B.		185 00		185 00
64016	Shadrick, William		45 00		45 00
64018	Snyder, William		100 00	100 00	200 00
64022	Stevens, John G.		100 00	100 00	200 00
64024	Shaw, Charles		100 00		100 00
64029	Smith, Jacob	87 60	100 00		187 60
64071	Sparks, Miller M.	153 83			153 83
64073	Simpson, J. H.	52 14			52 14
64090	Sutton, John F.	20 45			20 45
64213	Semons, Francis A.		283 34		283 34
64240	Steward, James			90 00	90 00
64249	 do			10 00	10 00
64254	Shoemaker, Alexander	60 66			60 66
64259	Sims, Peter K.	53 85			53 85
64266	Stow, John W.	93 57	45 00		138 57
64275	Seelinger, Philip F.	8 39			8 39
64277	Sloan, Hampton P.	34 92			34 92
64317	Stanley, Greenberry		33 34		33 34
64324	Silvey, Alexander	29 07		100 00	129 07
64360	Searcy, William C.		200 00		200 00
64407	Schneider, Henry L.		100 00		100 00
64422	Seer, Adam			100 00	100 00
64429	Seely, David T.		66 41		66 41
64473	Swartwood, Martin V.	101 93		50 00	151 93
64579	Shaw, William H.	22 46	15 00		37 46
64587	Skofstad, Albert	14 70	100 00		114 70
64711	Seaver, George W.		100 00	100 00	200 00
64713	Standish, James C.	53 47	10 00		63 47
64714	Streeter, Eli		20 00		20 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
64715	Simonton, De Witt C.....		\$100 00		\$100 00
64718	Smith, Nicholas S.....	\$59 36			59 36
64720	Sherrard, Samuel S.....		100 00		100 00
64725	Smith, William I.....	69 86			69 86
64726	Sheafer, Ira.....	49 78			49 78
64730	Smith, Allen.....	1 49			1 49
64908	Sanders, Harry.....		99 51	\$100 00	199 51
64909	do.....	10 01	49		10 50
64934	Stephany, John.....		100 00		100 00
64937	Schuchardt, William.....		100 00	100 00	200 00
64977	Shepard, James F.....	16 20			16 20
64983	Smith, Martin V. B.....	32 58			32 58
64986	Sharra, Abram.....		100 00		100 00
65137	Scoles, Hamilton J.....	138 47			138 47
65142	Sanders, Uriah B.....		100 00		100 00
65332	Strong, Henry W.....		100 00		100 00
65338	Spencer, Theodore.....		75 00		75 00
65350	Schermerhorn, Philip.....		40 00		40 00
65662	Smith, Isaac.....	43 62			43 62
65666	Searls, William T.....		200 00		200 00
65679	Sargent, Daniel K.....	331 88			331 88
65867	Sweet, Abel T.....		100 00		100 00
65937	Scripture, Crossman.....	6 04	100 00		106 04
65952	Sherman, Abram.....		100 00		100 00
66037	Shelby, David.....		90 00		90 00
66038	do.....		10 00		10 00
66046	Snowden, Nelson.....	68 77	300 00		368 77
66047	do.....	10 00			10 00
66051	Shoemaker, Joseph.....	604 63	100 00		704 63
66052	Scoby, William.....		278 55		278 55
66059	Smith, Oscar D.....	193 70	200 00		393 70
66217	Stokes, Alvin R.....	158 06	75 00		233 06
66257	Stewart, Erastus W.....	3 45	75 00	50 00	128 45
66277	Sanborn, John A.....		100 00		100 00
66360	Schertel, Anton.....		100 00	100 00	200 00
66361	Stevens, Hezekiah.....		100 00		100 00
66363	Spar, James B.....		100 00		100 00
66419	Stannis, John A.....		100 00		100 00
66426	Smith, Amos D.....	81 00			81 00
66427	Swisher, James M.....	38 49			38 49
66432	Shaw, Augustus P.....		100 00		100 00
66440	Stuart, Moses.....	19 99			19 99
66442	Schleicher, Konrad.....		100 00		100 00
66551	Singleton, Augustus F. S.....	103 25			103 25
66574	Sparks, Colman.....	44 20	100 00		144 20
66581	Swarthout, William.....	203 97			203 97
66584	Smith, James M.....	11 55	100 00		111 55
66588	Summers, Joseph.....	5 71			5 71
66642	Sebery, William.....	48 17			48 17
66676	Scott, Robert.....	42 86	100 00		142 86
66677	do.....	10 00			10 00
67246	Sivewright, John.....	9 90	100 00		109 90
67277	Segur, Marcellus L.....		14 73		14 73
29746	Shannon, Thomas.....		175 00		175 00
48958	Simons, Alfred S.....	8 79	100 00		108 79
51576	Stamper, James A.....		100 00	100 00	200 00
66225	Stewart, Warren D.....		100 00		100 00
67253	Spaeth, Henry.....		100 00		100 00
67256	Schmitthenner, Michael.....		100 00		100 00
66389	Scott, Daniel.....	10 25	100 00	50 00	160 25
66390	do.....	10 00			10 00
66557	Stearns, Isaac M.....		75 00	100 00	175 00
66750	Simpson, John H.....		100 00		100 00
64359	Stansbury, Samuel M.....	16 97	100 00	50 00	166 97
66947	Shurtz, Abraham M.....	3 34	33 33		36 67
66935	Smith, John M.....	06	33 33		33 39
65943	Smith, William H.....	30 03			30 03

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66950	Stokley Joseph R		\$33 33		\$33 33
66921	Stevens, James H		100 00		100 00
67593	Slayton (or Slaton), John W		100 00		100 00
65730	Sibley, Isaac D	\$32 07			32 07
63878	Stevens, Cassius R		200 00		200 00
56313	Stygles, Norman. (See George H. Webber.)				
11264	Tucker, Alexander		80 00		80 00
13003	Toles, Linus		120 00		120 00
23114	Thompson, Thomas C	34 07			34 07
32546	Thacker, Thomas	16 40	100 00		116 40
43888	Tribby, James W	115 87	100 00		215 87
44670	Tanner, Conrad		100 00	\$50 00	150 00
50884	Tisdale, Charles H		75 00	100 00	175 00
52614	Taylor, James, 2d		5 00		5 00
53273	Taylor, James	10 00			10 00
53482	Terrell, William	83 39			83 39
53483	do	7 50			7 50
53489	Thomas, Charles	5 00			5 00
56934	Thompson, Thomas T		100 00		100 00
56935	Townsend, Alfred		100 00		100 00
56944	True, Elias R		100 00	100 00	200 00
57581	Turner, Sashuel		25 00		25 00
57728	Thornburg, John W	14 16			14 16
57783	Tipton, Francis M	29 43	56 25		85 68
57788	Trout, William S	47 05			47 05
58386	Taylor, Warren		78 04		78 04
58387	do		7 50		7 50
58440	Tiffany, Allen W	715 00			715 00
58566	Tucker, Harrison		90 00		90 00
58567	do		10 00		10 00
58568	Teems, Robert		89 50		89 50
58569	do		10 50		10 50
58658	Thompson, John		100 00	100 00	200 00
58717	Trott, Joseph	63 72			63 72
58726	Thomas, Howard			9 48	9 48
58906	Talley, William H		59 13		59 13
58976	Thompson, James G	365 32			365 32
59093	Taylor, James P	50 24	33 33		83 57
59164	Thayer, Nelson	10 00			10 00
59275	Thomas, Thaddeus		82 00		82 00
59276	do		7 50		7 50
59433	Tinker, Sidney	187 11			187 11
59435	Tirtlot, William M	28 25			28 25
59442	Thomas, Nathaniel A	24 00			24 00
59443	Truworthy, Henry E		33 33		33 33
59449	Travers, Thomas		100 00		100 00
59464	Twitchell, Marshall H	322 15			322 15
59466	Tyler, Robert L	281 51	110 00		391 51
59777	Turner, William G		97 89		97 89
59815	Thompson, James A			100 00	100 00
59818	Thompson, Samuel		108 67		108 67
59819	Tibbetts, William	56 16			56 16
60168	Todd, Fleming		89 50		89 50
60169	do		10 50		10 50
60478	Thompson (Thomsen), Ole	41 06	100 00		141 06
61910	Tyner, Harrison	86 92			86 92
62177	Troxel, William		100 00		100 00
62185	Towslee, Charles A	16 76	100 00		116 76
62196	Thomas, Marcellus		100 00		100 00
62269	Tillotson, Hiram L	32 64			32 64
62422	Tefft, Adelbert F		175 00		175 00
62520	Teel, Jordan	35 51			35 51
62707	Teller, Richard M	80	100 00		100 80
62852	Taylor, James C	43 12	25 00		68 12
62854	Tuttle, Charles	47 57	15 00		62 57
63002	Tucker, James		100 00		100 00
63052	Teubner, David	51 00			51 00

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
63054	Teic (or Teiz), Wenzel		\$100 00		\$100 00
63211	Tate, Franklin		296 28		296 28
63305	Tunison, James W	\$3 11			3 11
63326	Taylor, Gilbert	57 00	25 00		82 00
63462	Thayer, Pliny M.	13 86			13 86
63466	Thomas, Benjamin F.		100 00		100 00
63467	Timblin, William H.	410 91	100 00		510 91
63525	Terry, Wiley C	34 09			34 09
63739	Thayer, Homer L		100 00		100 00
63918	Turner, John	41 94	75 00		116 94
63925	Thompson, John H		200 00		200 00
64247	Tucker, Daniel	82 69			82 69
64248	do.....	7 50			7 50
64272	Thomas, James B	95 71			95 71
64322	Tyree, James H		100 00	\$100 00	200 00
64480	Thompson, Charles		75 00		75 00
64481	Titus, Jacob		100 00		100 00
64719	Temple, Samuel S	58 50	100 00	100 00	258 50
64721	Twitty, Allen			50 00	50 00
64723	Tate, Joseph H		33 33		33 33
64900	Todd, Anderson	9 17	100 00		109 17
64901	do.....	6 00			6 00
64902	do.....	5 00			5 00
64903	Thompson, Robert	7 87	260 00		267 87
64904	do.....	10 00			10 00
64973	Tobin, James		100 00		100 00
65018	Thompson, Melvin		145 00		145 00
65019	do.....		10 00		10 00
65068	Thompson, Alfred M		100 00		100 00
65070	Tate, Samuel G		25 00		25 00
65124	Thorp, Joseph B		100 00		100 00
65140	Thomas, Robert J			50 00	50 00
65333	Totten, James M		100 00		100 00
65654	Thomas, Seth M		300 00		300 00
65942	Tiffany, Charles N		100 00		100 00
66060	Tufflemire, Abraham		75 00		75 00
66633	Taylor, Guilford D		100 00		100 00
67133	Thurber, Jerome P		100 00		100 00
67337	Teed, David	14 45			14 45
65888	Temple, George		100 00		100 00
66216	Tatro, Thomas	249 09	200 00		449 09
66678	Trunnells, John	4 29	300 00		304 29
66679	do.....	10 00			10 00
66264	Thompson, Andy	115 08			115 08
66942	Thrall, Eugene S	251 03			251 03
65670	Thompson, James J		100 00		100 00
66780	Talbot, Henry H	121 91			121 91
66773	Thompson, Charles E	55 92	100 00	50 00	205 92
67412	Thompson, George W		100 00		100 00
67460	Torrey, John	130 23			130 23
67284	Thayer, Moses A	116 53			116 53
59840	Thorp, Charles. (See Baldwin.)				
63493	Underwood, John	602 98			602 98
26251	Vaught, Martin	215 26			215 26
42105	Vanover, Henry		54 88		54 88
44207	Vaught, Otto D		8 34		8 34
49338	Van Vinkel, Jacob	211 88			211 88
56628	Van Weick, Heinrich		175 00		175 00
56938	Vanderbogert, Henry R		100 00		100 00
59108	Varding, Charles	87 99			87 99
59447	Vanderhook, William L	82 96			82 96
59874	Van Owen, Ore		100 00		100 00
62291	Vermeenen, Charles H	130 09	115 00		245 09
63058	Vest, Henry	16 50	155 00		171 50
63069	Vest, Toliver P	21 00			21 00
63469	Van Mater, George W		100 00		100 00
63756	Van Antwerp, William B	612 71			612 71
64342	Verkerke, Henry C			50 00	50 00
64692	Vanmetre, John		100 00		100 00

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WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
64894	Van Buren, Martin	\$1 26	\$100 00	\$100 00	\$201 26
64895	do	10 00			10 00
64933	Vitt, Herman W		100 00		100 00
64945	Vreeland, Jacob H	44 95			44 95
66345	Van Buskirk, Joseph		100 00		100 00
66647	Van Arnam, Jacob H	2 31	100 00		102 31
55418	Van Slyke, William A	197 10			197 10
66748	Vanyea, Francis (or Frank)	9 40			9 40
58794	Volkart, Daniel. (See Fulger.)				
9866	Whalen, John	20 34	75 00	100 00	195 34
11970	Williams, Amos C		25 00		25 00
16237	Weddle, Daniel C		33 34		33 34
29153	Worden, Leroy		25 00		25 00
30796	Wetmore, Nicholas H		136 69		136 69
30807	Wall, Joseph		100 00	50 00	150 00
30992	Walker, Anson J	1,034 01			1,034 01
33123	Welch, William J		25 00		25 00
43720	Wilkins, Frederick G	7 54		50 00	57 54
47840	Welsh, Andrew J		100 00		100 00
51130	Wells, Benonia	61 25	125 00		186 25
51969	Warren, Samuel	10 00			10 00
54676	Woodruff, David	10 00			10 00
55851	Wells, William M	154 77			154 77
56313	Webber, George H., alias Norman Stygles		51 42		51 42
56569	Wood, William		25 00		25 00
56658	Worrell, James P	144 40			144 40
56942	Woods, Edwin S		25 00		25 00
57721	Wardwell, David D	103 20			103 20
57724	Walker, James D	152 96			152 96
57725	White, Hiram A	13 93			13 93
57729	Wallace, Thomas M	147 86			147 86
57730	Wilson, John H	154 59			154 59
58015	Welsh, John		75 00	50 00	125 00
58153	Wilkinson, James C		35 00		35 00
58298	Weber, Peter	13 00	60 00		73 00
58303	White, Horace G	302 49			302 49
58351	West, Henry E		100 00		100 00
58388	Woods, Richard	41 79	100 00	50 00	191 79
58388½	do	10 00			10 00
58553	Withers, Merritt	27 80	115 00		142 80
58562	Williams, Jackson	92 68	300 00		392 68
58563	do	10 00			10 00
58570	Washington, Stephen	11 23	100 00		111 23
59271	do	10 00			10 00
58576	Whitehead, Vardy	67 42	75 00	50 00	192 42
58723	Wiseman, Jacob		60 00		60 00
58857	Weatherbe, Joseph H		100 00		100 00
58908	Wagner, Engelbert	15 73	100 00		115 73
58978	Whitehill, William	286 53			286 53
59153	Weeks, Darwin L	118 39			118 39
59155	Woods, John W	206 94	75 00	50 00	331 94
59170	Wheeler, William	210 03			210 03
59272	White, Charles		103 50		103 50
59273	do		11 50		11 50
59274	Wilhite, Winston	174 50		100 00	274 50
59281	Watts, Harry	39 00	300 00		339 00
59282	do	10 00			10 00
59341	Whitfield, I. J	116 32			116 32
59354	Watson, Martin		250 00		250 00
59434	Wright, William H	46 03			46 03
59444	Wood, Benjamin C	9 90			9 90
59446	Ware, John	71 13	75 00		146 13
59448	Witham, Nathaniel R		75 00	100 00	175 00
59454	Wilson, Thomas		100 00	100 00	200 00
59455	Wetherall, George B			50 00	50 00
59481	Wright, Peter		100 00		100 00
59577	Whyte, Alexander J	110 54			110 54
59716	Wilson, John W	106 26			106 26

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
59720	Wilson, John			\$50 00	\$50 00
59873	White, George		\$92 00		92 00
59879	Way, William H	\$24 53	33 33		57 86
59880	Wheeler, Horace		40 00		40 00
59882	Wood, Harrison	26 03			26 03
59910	Westfall, Elihu		100 00	100 00	200 00
60232	Woodbury, David	14 27			14 27
60233	Weiler, Frank		100 00		100 00
60251	Wheelock, Samuel		100 00		100 00
60255	Woods, Abel	133 86			133 86
60258	White, Jacob F	69 92	15 00		84 92
60259	Wright, Henry T	245 20	285 00		530 20
60264	Woodward, George W	9 90		50 00	59 90
60791	Weaver, Francis	32 06			32 06
60800	Wilcox, Charles	133 00			133 00
60861	Wells, Curtis B		100 00		100 00
60862	Willey, William W		25 00		25 00
60863	White, James K	22 34	15 00		37 34
60864	Wimer, John		75 00	100 00	175 00
60865	Whitman, William		75 00		75 00
60866	Williams, Hiram	51 66			51 66
60867	Williams, John S	1 10			1 10
60870	Warren, Peter	13 28			13 28
60871	Weaver, James H		110 00		110 00
60887	Washburne, James D	58 14	15 00		73 14
61052	Woodruff, Alford C	22 03	15 00		37 03
61868	Wenzel, Czerweny	34 65			34 65
61929	White, Daniel		120 00		120 00
61981	Weaver, Edward F		100 00		100 00
61983	White, Albert C	101 14			101 14
62097	Worden, William H		190 00		190 00
62172	Walker, Martin		100 00		100 00
62179	West, Samuel A		100 00		100 00
62183	Willison, John J	17 49	150 00		167 49
62190	Woelfer, Charles	116 78			116 78
62200	Wilson, French	8 37	100 00		108 37
62201	do	10 00			10 00
62252	Willits, Hugh H	112 15			112 15
62254	White, George W	14 08			14 08
62255	Webb, James J	100 96	100 00		200 96
62256	Wild, Azariah F	69 25			69 25
62277	Wood, James D		100 00		100 00
62281	White, James E		100 00		100 00
62282	Wilcox, Jesse B		100 00		100 00
62289	Wasson, John C. S	67 74			67 74
62310	Woodard, John	39 40			39 40
62418	Wickwire, William S		100 00	100 00	200 00
62425	Williams, William P		100 00	100 00	200 00
62430	Wright, John A		300 00		300 00
62515	Wendon, William G	51 94	25 00		76 94
62516	Wilson, Chancy C	28 16			28 16
62518	Whidden, Charles H	103 47	260 00		363 47
62670	Wilcox, James	31 07	100 00	100 00	231 07
63231	do	13 00			13 00
62675	Wilcox, John	28 56			28 56
62775	Woodworth, Horace	3 56	75 00		78 56
62812	Williams, Henry	13 84			13 84
62826	White, Alexander	123 34	66 66		190 00
62846	Whitcraft, Robert		75 00		75 00
62849	Worley, John Q		100 00		100 00
63000	Wodell, Warren W		100 00		100 00
63053	Wiggs, William J	9 50			9 50
63057	Willis, James C	50 45	155 00		205 45
63243	Wade, James	5 60	300 00		305 60
63276	Webber, William B	81 50			81 50
63280	Waterman, Albert A		120 00		120 00
63297	Wilcox, William R		100 00		100 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volun- teers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
63304	Wygant, Harvey M	\$44 38			\$44 38
63376	Wier, John			\$50 00	50 00
63461	Walkinshaw, Joseph C	57 33			57 33
63465	Ward, Henry C	86 76	\$100 00		186 76
63501	White, George B.		100 00		100 00
63524	Waits, Allen	64 37	100 00	50 00	214 37
63574	Wesner, Ambrose	65 76	15 00		80 76
63582	Williams, Phillip C		300 00		300 00
63591	Wetherell, Whiting M.	212 79			212 79
63661	Wilson, Ezra A	17 50	235 00		252 50
63683	Wardlow, Hampton	81 76	100 00		181 76
63745	Williams, George P	189 44	120 00		309 44
63837	Wilcox, Alexander	87 26	100 00		187 26
63838	do	11 00			11 00
63882	Wilson, Frank		100 00		100 00
63912	Wyeth (or Wythe), George W. P.		100 00		100 00
63920	Wedgwood, Thomas S.		100 00		100 00
64019	Whipple, John C		100 00		100 00
64020	Wells, Edmund S.		75 00	100 00	175 00
64025	Wilson, Asa		100 00		100 00
64032	Wall, Garrett	11 74			11 74
64038	Wilbur, George H.	50 33			50 33
64045	Weiser, George	26 61		50 00	76 61
64053	Williams, Daniel		90 00	50 00	140 00
64054	do		10 00		10 00
64225	Warne, Thomas A		100 00		100 00
64328	Wheeler, Stephen H.	6 49		100 00	106 49
64366	Wetzel, Lewis			100 00	100 00
64392	Wells, Americus		100 00		100 00
64400	Wylie, Francis H.		300 00		300 00
64411	Welch, Martin	9 64			9 64
64433	Ward, William C		80 01		80 01
64438	Wice, Simon	44 26	100 00	50 00	194 26
64445	White, John T			50 00	50 00
64712	Warren, Paul C			100 00	100 00
64724	Weidner, John H		100 00		100 00
64728	Wagner, Alfred H	9 06	100 00		109 06
64729	Winn, Peter		100 00	50 00	150 00
64896	Wilson, Moses	89 12	100 00	100 00	289 12
64897	do	11 00			11 00
64972	Wenzel, Gottfried	39 28			39 28
64976	Woodruff, Henry T	13 01			13 01
64989	Walker, Owen O	28 50			28 50
65114	Wilson, George	95 12			95 12
65136	West, Henry		100 00		100 00
65144	Wilcox, Charles W.		100 00		100 00
65335	Wellman, William L			100 00	100 00
65711	White, James	23 43	75 00	100 00	198 43
65747	Wick, Stephen		200 00		200 00
55931	Woelfel, Fred., alias Frederick Wilful ..	85 58			85 58
66033	Wright, Andrew	55 69			55 69
66034	do	7 50			7 50
66045	Wormley, Henry	59 80	100 00		159 80
66058	Warthen, William F	20 27			20 27
66251	Wiggins, Samuel	18 40	66 66		85 06
66254	Wright, Henry O			50 00	50 00
66276	White, Philip	76 85			76 85
66280	Waldron, Samuel K	13 00	100 00		113 00
66351	Walker, Addison		100 00		100 00
66352	Walker, Robert		100 00		100 00
66354	Wilkins, Romanzo L		100 00		100 00
66355	Wetzel, Henry H		100 00		100 00
66357	Wilson, James W		75 00	100 00	175 00
66422	Withers, Thaddeus C		100 00		100 00
66553	Wells, Oliver			50 00	50 00
66559	Warren, Thompson		350 00		350 00
66575	Warren, William D		100 00		100 00
66577	Wright, George		100 00		100 00

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certificate.	Name of claimant.	Appropriation from which payable.			Total.
		Pay of two and three year volunteers, 1871 and prior years.	Bounty to volunteers and their widows and legal heirs, 1871 and prior years.	Bounty under act of July 28, 1866, 1880 and prior years.	
WAR DEPARTMENT—Continued.					
CLAIMS—continued.					
66636	Wickes, George D.	\$20 89			\$20 89
66776	Wilshire, William A.		\$100 00	\$100 00	200 00
67235	White, Samuel K.	2 00	160 00		162 00
67273	Walker, William S.	50 24			50 24
52904	White, William H.	1 19			1 19
58365	Wells, Charles		100 00	100 00	200 00
58447	Wykoff, John N.		100 00	100 00	200 00
66385	Whitehead, Pleasant	19 50	100 00		119 50
66386	do	12 50			12 50
67239	Waddell, George G.	29 90			29 90
67313	Woodward, Allison	22 93	100 00		122 93
66941	Wigant, John	26 28	75 00	50 00	151 28
66430	Woodward, Warren	175 97			175 97
66940	Williams, George A.	60 34			60 34
67414	Warner, William H.		100 00		100 00
67692	Wills, Abraham	45 74	66 66		112 40
67691	Wills, Alfred	67 62	66 66		134 28
66285	Woodward, John W.		100 00		100 00
67773	Wilson, John		100 00		100 00
67778	Whitney, Samuel C.		100 00		100 00
65726	Whitton, Stokeley D.	246 73			246 73
64280	Wisner, William A.	95 01			95 01
6621	Waltz, Levi	20 85			20 85
45311	Young, James E.		265 90		265 90
54842	Young, George	96 52	66 67		163 19
58662	Young, Delos W.	105 01			105 01
59490	Young, Jerry		92 53		92 53
60151	do	3 53	7 47		11 00
60416	Yarnell, Milton G.	216 70			216 70
60419	Young, William	149 79			149 79
60548	Young, Samuel		94 33		94 33
60549	do	4 33	5 67		10 00
62420	Young, Jerome W.		100 00		100 00
62842	Young, Charles	234 16			234 16
63951	Young, Salathiel	59 69	25 00		84 69
63953	Yount, Daniel W.	69 50	50 00		119 50
64047	Young, William B.	32 44			32 44
64050	Yunt, Harrison P.	33 80			33 80
65883	Young, Samuel W.		75 00	50 00	125 00
65940	Yaw, Edwin C.		100 00		100 00
66044	Young, Thursday		100 00		100 00
66281	Yeager, Francis	222 84	100 00	100 00	422 84
66436	Yerkes, John D.		100 00		100 00
66686	Young, James		88 50		88 50
66687	do		11 50		11 50
63510	Youngs, Eber B.		29 68	50 00	79 68
56656	Yates, Wyatt		3 75		3 75
56655	do		3 75		3 75
56654	do		19 16		19 16
57704	Yearly, Andrew. (See Early.)				
58729	Zoller, Bernhard		100 00	100 00	200 00
59169	Zang, Ernst	306 61			306 61
61864	Zell, Henry	15 21			15 21
64979	Zimmermann, John	186 10			186 10
65067	Zimmerman, John B.		100 00		100 00
65880	Zarbaugh, William H.		100 00	100 00	200 00
Total		¹ 146,260 35	² 163,448 11	³ 32,533 90	342,242 36

¹Arrears of pay, &c., balance of appropriation carried to surplus fund.

²Bounties under sundry acts of Congress.

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate.	Name of claimant.	Appropriation from which payable.	Fiscal year.	Amount.
WAR DEPARTMENT—Continued. CLAIMS—continued.				
39089	Ames, Robert F	Pay, &c., of the Army, 1884 and prior years.	1884	\$17 50
60855	Ahrens, William	do	1865	10 15
39083	Boswell, Benjamin D	do	1877	66 88
46339	Brooks, Spencer	do	1867	488 07
57587	Brewer, Robert B	do	1864	68 43
60412	Badger, Nicholas D	do	1883	254 05
62494	Bailey, Charles M	do	1882	83 70
62983	Baldwin, John M	do	1883	136 19
4904	Bash, D. N	do	1880	16 33
6347 ¹	Cleary, Peter J. A	do	1882	46 44
54958	Curtis, William H	do	1848	12 78
39082	Campbell, Jos. B	do	1882	3 75
60428	Callender, Franklin D	do	1883	684 37
61197	Crary, Hannibal	do	1849	44 57
63380	Clifford, Reuben	do	1881	59 84
66816	Crumm, Oscar	do	1880	16 29
51626	Dove, William E	do	1883	4 00
60411	Dimpfel, George H. A	do	1873	197 91
63375	Daka, Winslow J., alias Drake, William J	do	1862	5 36
66815	De Lagure, Julius A	do	1861	81 61
62989	Duniver, Jesse B	do	1867	8 52
57582	Findeisen, Hugo	do	1881	205 65
66812	Fritz, Henry H	do	1864	48 75
54613	Hammond, Richard P	do	1851	179 95
57588	Hood, Thomas	do	188 ¹	408 67
57589	do	do	1881	10 00
58086	Hammond, William	do	1851	79 08
58137	Hopwood, Thomas H	do	1868	15 63
61202	Holmes, John	do	1849	6 00
62990	Heyburn, Patrick	do	1862	13 77
6879	Hoskins, John D. C	do	1882	48 00
57252	Jordan, Allen R	do	1883	94 66
59610	Jones, Caleb P	do	1849	52 86
64286	Jenifer, William	do	1880	35 07
54108	Keller, Lewis	do	1864	22 60
62977	Knapp, John S	do	1864	30 61
57251	Lloyd, Charles F	do	1883	126 31
62979	Leas, J. Edwin	do	1870	62 42
63372	Lecour, Raphael	do	1880	28 44
58098	Little, Henry	do	1861	10 96
30958	Mackay, William S., alias William M. Porter	do	1873	79 54
39086	McIver, George W	do	1883, 1884	88 84
57253	Monroe, F. Le Baron	do	1876	39 90
57579	Maze, James H	do	1864	95 68
60852	Meerholz, Herman	do	1883	204 51
63377	Miller, George J	do	1882	190 52
63374	McCain, Alexander	do	1862	8 36
58077	Plympton, Joseph	do	1860	49 83
58081	Payne, Matthew M	do	1862	984 80
60851	Pinkerton, Hugh	do	1866	27 03
59601	Randall, Daniel	do	1852	36 82
60856	Rice, Peter	do	1883	34 16
62976	Rousseau, George L	do	1881	141 31
4901	Roche, James R	do	1879	38 96
57583	Stein, C. A	do	1877	278 56
57586	Servis, Jonathan	do	1865	10 18
63373	Stephens, James R	do	1883	39 61
63381	Sterns, Max	do	1875, 1876	1,043 67
63388	Smith, John	do	1879	48 20
66813	Smith, James	do	1865	89 54
51622	Tracy, Thomas G	do	1871	618 35
54960	Totten, James	do	1871	29 23
63387	Turley, James Henry	do	1876	166 38
61209	Whitall, John A	do	1866	66 62
Total				18,196 77
6820	Pittsburgh, Pa., city of	Expenses of recruiting, 1884 and prior years.	1884	27 75
6857	Trader, C. W	Medical and Hospital De- partment, 1884 and prior years.	1884	350 00
6875	Wiley, Elizabeth (colored)	do	1864	417 00
Total				67 00

¹ Arrears of pay, &c.; balances of appropriations carried to surplus fund.
owned by United States and used as recruiting rendezvous; in surplus fund.
services to an enlisted man; in surplus fund.

⁴ Cook in general hospital.

² Water rent on building
³ Surgica and medical

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certificate.	Name of claimant.	Appropriation from which payable.	Fiscal year.	Amount.
WAR DEPARTMENT—Continued.				
CLAIMS—continued.				
59255	Petrea, George	Pay of volunteers (Mexican war), 1871, and prior years.	1848	\$6 19
59608	Sullivan, James	do	1848	4 53
	Total			110 72
60250	Stevens, Byron	Traveling expenses of First Michigan Cavalry, prior to July 1, 1884. (Act July 28, 1866.)		159 65
64423	Aitken, James	Traveling expenses of California and Nevada Volunteers, prior to July 1, 1884. (Act March 2, 1867.)		49 47

¹ Bounties under sundry acts of Congress.

RECAPITULATION OF WAR DEPARTMENT CLAIMS ALLOWED BY THE SECOND AUDITOR AND SECOND COMPTROLLER.

Pay of two and three years' volunteers, 1871 and prior years	\$146,260 35
Pay of volunteers (Mexican war), 1871 and prior years	10 72
Pay, &c., of the Army, 1884 and prior years	8,196 77
Bounty to volunteers and their widows and legal heirs, 1871 and prior years	163,448 11
Bounty act July 28, 1866, 1880 and prior years	32,533 90
Expenses of recruiting, 1884 and prior years	7 75
Medical and Hospital Department, 1884 and prior years	67 00
Traveling expenses of First Michigan Cavalry, prior to July 1, 1884	159 65
Traveling expenses of California and Nevada Volunteers, prior to July 1, 1884	49 47
Total	350,733 72

Reported by the Second Auditor and Second Comptroller, under section 2, act July 7, 1884 (23 Stat., p. 254).

No. of certificate.	Name of claimant.	Appropriation from which payable.	Fiscal year.	Amount.
INTERIOR DEPARTMENT.				
CLAIMS.				
9601	Central Pacific R. R. Co.	Contingencies of the Indian Department, 1884 and prior years.	¹ 1879	\$25 47
9147	Chicago, Rock Island and Pacific R. R. Co.		¹ 1882	9 40
	Total			34 87
7954	Countryman, Horace	Support of Crows, 1884 and prior years.	² 1878	1,155 00
8932	Harris, William P.	Support of Klamaths and Modocs, 1884 and prior years.	³ 1872	269 00
4407	Central Pacific R. R. Co.	Telegraphing and purchase of Indian supplies, 1884 and prior years.	⁴ 1884	42 67
9601	do	Transportation of Indian supplies, 1884 and prior years.	¹ 1879	303 77

¹ Balance of appropriations carried to surplus fund. Transportation furnished for Indian service.

² Balance of appropriation carried to surplus fund. Hay furnished for Crow Agency. Account certified under act of June 14, 1878.

³ Balance of appropriation carried to surplus fund. Services as blacksmith on Klamath Reservation.

⁴ Amount short appropriated by act August 4, 1886 (24 Stat., 271), through error in estimate.

Reported by the Second Auditor and Second Comptroller, &c.—Continued.

No. of certificate.	Name of claimant.	Appropriation from which payable.	Fiscal year.	Amount.
INTERIOR DEPARTMENT—Cont'd. CLAIMS—continued.				
9601	Central Pacific R. R. Co.	Traveling expenses of Indian inspectors, 1884 and prior years.	¹ 1878	\$44 32
	do	do	¹ 1879	103 45
	Total			147 77
8155	Donaldson, John A.	Twenty per cent. additional compensation, prior to July 1, 1884.	² 1867, 1868	121 78
8154	Mix, Edward M.	do	² 1867	151 05
	Total			272 83

¹Balance of appropriations carried to surplus fund. Transportation furnished for Indian service.

²Joint resolution, February 28, 1867. Employees Indian service, Washington, D. C.

RECAPITULATION OF INTERIOR DEPARTMENT (INDIAN) CLAIMS ALLOWED BY THE SECOND AUDITOR AND SECOND COMPTROLLER.

Contingencies of the Indian Department, 1884 and prior years	\$34 87
Support of Crows, 1884 and prior years	1, 155 00
Support of Klamaths and Modocs, 1884 and prior years	269 00
Telegraphing and purchase of Indian supplies, 1884 and prior years	42 67
Transportation of Indian supplies, 1884 and prior years	303 77
Traveling expenses of Indian inspectors, 1884 and prior years	147 77
Twenty per cent. additional compensation, prior to July 1, 1884	272 83
Total	2, 225 91

Reported by the Third Auditor and Second Comptroller, under section 2, act July 7, 1884 (23 Stat., p. 254).

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
INTERIOR DEPARTMENT—PENSIONS. CLAIMS.				
¹ 6438	Charles B. Lines, (late) pension agent	Army pensions, 1884 and prior years.	1875	\$30 79
¹ 6531	William L. McMillen, (late) pension agent	do	1879	24 46
¹ 8007	David B. Wilson, (late) pension agent	do	1876	306 08
¹ 8721	Boston and Albany Railroad Company	do	1871	33 50
	Total pensions			394 83

¹ In surplus fund.

Reported by the Third Auditor and Second Comptroller, under section 2, act of July 7, 1884
(23 Stat., p. 254).

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT.					
CLAIMS.					
89533	4066	Harrison, Thomas B., sergeant United States Army.	Signal service, incidental expenses 1884 and prior years (extra-duty pay, sec. 1287 Rev. Stat.).	1884	\$91 00
89521	4327	Leitzell, Stuart M., private United States Army.	do	1884	31 50
					122 50
89521	4327	Leitzell, Stuart M., private Signal Corps, United States Army.	Signal Service, incidental expenses 1885, extra-duty pay, (sec. 1287, Rev. Stat.).	1885	10 50
88704	3372	Atchison, Topeka and Santa Fé R. R. Co. ¹	Signal Service, transportation 1884 and prior years (sundry civil act, Mar. 3, 1883.)	1884	3 01
89644	3938	Chicago, Rock Island and Pacific Rwy. Co.	do	1884	9 79
89643	4031	do	do	1884	2 55
78531	6574	Central Pacific R. R. Co	do	1884	10 18
76622	5639	do	do	1884	30
75550	5540	do	do	1884	2 92
77779	5538	do	do	1884	62 30
75491	5541	do	do	1884	126 92
77780	5515	do	do	1884	70 29
89033	3822	Kansas City, Fort Scott and Gulf R. R. Co.	do	1884	30 00
					318 26
74345	2802	Counselman, John	Contingencies of fortifications.	1862, 1863	1,081 00
78365	3396	King, Wilson, deceased; Sarah King, widow.	do	1862, 1863	78 75
					1,159 75
79334	3587	White, Vincent L., deceased; Mary Neville, late widow, and Robert L. White, only child.	Gunboats on Western Rivers (12 Stat., 263, 331, and 507, 1884 and prior years.)	1862	20 56
(²)	7257	Greely, Adolphus W., lieutenant Fifth Cavalry and A. S. O., U. S. A.	Construction and operation of a line of telegraph on the frontier settlements of Texas prior to to July 1, 1884 (act June 3, 1874).	³ 1877	15
16445	3603	Bailey, William S., deceased; Henry M. Mills, administrator of.	Expenses of minute men and volunteers in Pennsylvania, Maryland, and Ohio (act March 3, 1863).	1863	54 75
21762	4326	Banning, Thomas C., deceased; W. C. Griswold, administrator of trust.	Rogue River Indian war, prior to July 1, 1884 (act July 17, 1854, extended by act February 2, 1871).	1854	646 57
21762	4060	Moray, Peter	do	1854	406 57
					1,053 14
78494	3288	Duval, Edmund J.	Twenty per centum additional compensation, prior to July 1, 1884 (under joint resolution of February 28, 1867, 14 Stat., 569).	1867	35 00
87478	3415	McCormick, James	do	1867	106 50
75786	3504	Shea, Timothy	do	1867	18 16
					159 66

¹See lists Army transportation and 5 per cent. arrears.

²Signal account.

³And prior years.

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
4890	3924	Adams, Moses, deceased; W. C. Griswold, administrator of trust.	Pay, transportation, services, and supplies of Oregon and Washington volunteers in 1855, 1856, 1871, and prior years (act March 2, 1861).	1855, 1856	\$87 21
4889	3880	Bozarth, Christopher C.	do	1855, 1856	69 46
4887	3803	Corey, George R.	do	1855, 1856	27 60
4887	3803	Garrison, Abraham H.	do	1855, 1856	76 00
4888	3816	Haddix, George W., deceased.	do	1855, 1856	125 93
4894	4485	Hillman, J. W.	do	1855, 1856	205 00
4886	3392	Keith, Warren C.	do	1855, 1856	61 80
4889	3880	Knight, Ira W.	do	1855, 1856	82 04
4884	2916	Lancaster, Columbia	do	1855, 1856	146 58
4889	3880	Morgan, Lewis, deceased, Elizabeth Morgan, mother of.	do	1855, 1856	31 53
4891	4380	Marshall, Henry	do	1855, 1856	5 23
4888	3816	Pettyjohn, M. C.	do	1855, 1856	34 00
4885	2915	Sears, Granville	do	1855, 1856	127 20
4893	4466	Simpson, J. W.	do	1855, 1856	29 38
4890	3924	Tabor, John A., deceased, W. C. Griswold, administrator of trust.	do	1855, 1856	148 66
		Wilkes, Jabez	do	1855, 1856	44 00
					1,301 62
3061	.....	State of Pennsylvania	Refunding to States expenses incurred in raising volunteers (act July 27, 1861).	1861-1865	3,949 53
3404	.....	State of Ohio	do	1861-1865	23 83
3439	.....	do	do	1861-1865	1,621 08
3433	.....	do	do	1861-1865	1,007 00
4677	.....	do	do	1861-1865	35,860 86
3839	.....	State of Massachusetts	do	1861-1865	1,740 96
4021	.....	do	do	1861-1865	150 00
4448	.....	do	do	1861-1865	67 05
4575	.....	do	do	1861-1865	2,007 83
4577	.....	do	do	1861-1865	385 99
4576	.....	do	do	1861-1865	666 38
4812	.....	State of Connecticut	do	1861-1865	2,345 53
					49,826 04
(¹)	7198	Bishop, John S., lieutenant Thirtieth Infantry and acting commissary subsistence.	Subsistence of the Army, 1884 and prior years (sec. 1141, Rev. Stat.).	1882	53
88145	4805	Conway, George	do	1863-1865	442 00
45483	3869	Fulkerson, F. D.	do	1862, 1863	160 50
² 86451	3910	Galehouse, Harvey H.	do	1866	60 00
(¹)	7135	Gardiner, George W., captain and commissary subsistence U. S. Volunteers.	do	³ 1877	71 72
85916	4546	Hurd, Joseph	do	1867	60 69
84762	2896	Jones, Thomas M.	do	1865	378 65
(¹)	7099	Rockefeller, Charles M., lieutenant Ninth Infantry, acting commissary subsistence.	do	1881	1 00
89855	4099	Rickley, John	do	1864	26 34
70560	2927	Stewart, Robert, deceased, John Stewart, administrator of.	do	1863-1865	442 00
					1,643 43
74691	4283	Brown, James, deceased, Berrywick J. Brown, only heir.	Regular supplies Quartermaster's Department, 1884 and prior years (sec. 1133, Rev. Stat.).	1862	144 00
481102	2898	Central Pacific R. Co.	do	1884	73 38
86693	2899	Coburn, C. P.	do	1883	353 46
84180	3447	Flint, Julia	do	1865	66 50

¹ Subsistence account.² See list Commutation of rations.³ And prior years.⁴ See list Army transportation.

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
89324	3749	Fritz, Emil.....	Regular supplies Quartermaster's Department, 1884 and prior years (sec. 1133 Rev. Stat.).	1883	\$32 85
154288	2948	Heintzelman, S. P., deceased, Margaret S. Heintzelman, executrix.	do	1865	105 00
88852	4168	Hart, William (Thomas Lucas, holder and owner of voucher).	do	1863	16 80
75956	3248	McNutt, Hugh L.....	do	1865	17 00
77151	4422	Boring, S. B. (or Boving), administrator of Nancy Morton, deceased.	do	1863	60 00
34340	3557	Poe, Rebecca, widow of Samuel Poe, deceased.	do	1864	100 00
88852	4168	Senters, Moses (Thomas Lucas, holder and owner of voucher).	do	1863	18 00
88852	4168	Senters, Alvin B. (Thomas Lucas, holder and owner of voucher).	do	1863	34 20
88852	4168	Shone, Samuel (Thomas Lucas, holder and owner of voucher).	do	1863	19 00
49415	3986	Winton, Gilbert.....	do	1863	7 00
88852	4168	Walker, Thomas (Thomas Lucas, holder and owner of voucher).	do	1863	32 50
					1,079 69
86183	4300	Allen, Robert, father of Eli Allen, deceased.	Incidental expenses Quartermaster's Department, 1884 and prior years (sec. 1133, Rev. Stat.).	1880	9 40
84146	4518	Alford, Michael, private, artillery detachment, U. S. M. A.	do	1877-1883	26 60
83396	4382	Becker, Philip	do	1877-1883	26 20
84147	4517	Burns, William, private, artillery detachment, U. S. M. A.	do	1878-1883	25 40
84148	4556	Boyland, Ralph H., private, artillery detachment, U. S. M. A.	do	1880-1883	21 60
84149	4557	Brownley, Richard, private, artillery detachment, U. S. M. A.	do	1877-1883	26 00
83416	4383	Coffey, Michael	do	1877-1883	26 60
83415	4384	Crawford, William.....	do	1877-1883	26 80
83454	4515	Cashman, Michael, private, artillery detachment, U. S. M. A.	do	1877-1883	26 60
84152	4558	Cotter, Richard, private, artillery detachment, U. S. M. A.	do	1877-1883	22 20
84151	4559	Cox, John, private, artillery detachment, U. S. M. A.	do	1877-1883	26 20
84182	4749	Carroll, Edward, private, artillery detachment, U. S. M. A.	do	1877, 1878 } 1880-1883 }	20 80
83455	3420	Dinan, Jeremiah	do	1877-1883	45 85
83456	3436	Dutoit, John.....	do	1877-1883	26 60
81573	3460	Downing, Peter.....	do	1863, 1864	8 94
(2)	7275	Dugan, Thomas B., lieutenant Third Cavalry.	do	1884	5 60
83453	4514	Enright, Francis, private, artillery detachment, U. S. M. A.	do	1877-1883	46 20
83452	4385	Finnen, Joseph	do	1877-1883	26 20
84183	4750	Farrell, Michael, corporal, artillery detachment, U. S. M. A.	do	1877, 1878 } 1880-1883 }	26 60
84223	2751	Goldsmith, Charles.....	do	1877-1883	26 00
83541	3502	Graber, Michael	do	1877-1883	26 40
83599	4386	Herring, Patrick.....	do	1877-1883	26 40
85436	4754	Hagen, Bruno, late private, artillery detachment, U. S. M. A.	do	1877, 1878	10 53
83597	4374	Johnson, William C.....	do	1877-1881	10 50
83596	4375	Jones, Hugh	do	1877-1883	25 80
84279	2909	Lawrence, Medler.....	do	1877-1883	45 85

¹ See list Barracks and quarters.² Quartermaster's account.

Reported by the Third Auditor and Second Comptroller, &c—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT--Cont'd.					
CLAIMS—continued.					
84281	4614	Marcy, Louis, private U. S. M. A., detachment of artillery.	Incidental expenses Quartermaster's Department, 1884 and prior years (sec. 1133, Rev. Stat.).	1877, 1878 } 1880-1882 }	\$22 05
84283	4629	Monaghan, William, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	24 20
84284	4751	Francis Moore, sergeant U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	29 75
84282	4752	Miller, Charles M., private U. S. M. A., detachment of artillery.	} do	1880-1883 }	37 80
83669	4753	Malone, Patrick, sergeant U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	46 90
73771	4335	Nelson, William, deceased, Rachel Nelson, widow.	} do	1863 }	23 57
76958	4560	Neid, Louis, private U. S. M. A., detachment of artillery.	} do	1877-1883 }	16 50
84311	4773	Nold, August, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	27 56
84310	4774	Noonan, John, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	24 80
84312	4775	Oberle, Charles, private artillery detachment U. S. M. A.	} do	1877, 1878 } 1880-1883 }	25 60
83740	4776	Piano, George, private artillery detachment U. S. M. A.	} do	1880-1883 }	21 40
84314	4777	Rounder, Joseph, private artillery detachment U. S. M. A.	} do	1877, 1878 } 1880-1883 }	26 00
84315	4778	Ryan, Thomas E., private artillery detachment U. S. M. A.	} do	1878 } 1880-1883 }	42 00
83748	4781	Reidy, John, private artillery detachment U. S. M. A.	} do	1877, 1878 } 1880-1883 }	25 80
83764	4631	Schoepf, Aloys, private U. S. M. A., detachment of artillery.	} do	1877 } 1881-1883 }	4 20
84316	4632	Shreiber, John, private U. S. M. A., detachment of artillery.	} do	1877 } 1880-1882 }	12 80
84317	4755	Seiber, Frederick, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	40 60
83763	4779	Schmidt, Charles F., private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	39 90
83781	4780	Schanhard, Gottlieb, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1882 }	25 60
82975	2934	Thomas, Albert, deceased, Susanah Smith, widow.	} do	1863 }	10 00
83783	4633	Treacy, Thomas, private U. S. M. A., detachment of artillery.	} do	1881, 1882 }	38 45
83782	4634	Treacy, Daniel, sergeant U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	44 80
87407	2911	Walker, Catherine	} do	1880 }	19 00
89302	3849	Webb, William A	} do	1864 }	210 25
83884	4635	Wise, John, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	17 20
83885	4756	Wyse, Matthew, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	26 40
85549	4757	Watson, William H., late private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1883 }	19 00
83883	4758	Wunderlich, Charles, private U. S. M. A., detachment of artillery.	} do	1877, 1878 } 1880-1882 }	48 15
					1,592 15
188335	3265	Atchison, Topeka and Santa Fe R. R. Co.	Transportation of the Army, 1884 and prior years, (Sec. 1133 Rev. Stat.).	1883, 1884 }	178 51
188181	3338	do	do	1883, 1884 }	46 94
288704	3372	do	do	1882, 1883, 1884 }	682 49

¹ See list 50 per cent. of arrears.² See list Signal-Service transportation and 50 per cent. of arrears.

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
87633	3403	Atchison, Topeka and Santa Fé R. R. Co.	Transportation of the Army, 1884 and prior years. (Sec. 1133, Rev. Stat.).	1881	\$0 58
¹ 88353	3934	do	do	1883	266 97
¹ 89431	3968	do	do	1883	4 17
78505	4045	Arnold Armstrong	do	1865	40 00
¹ 87639	4563	Atchison, Topeka and Santa Fé R. R. Co.	do	1877-1880	243 62
¹ 87635	4579	do	do	1881	3,516 44
¹ 89355	4625	do	do	1884	560 36
84453	1139	Boston and Albany R. R. Co.	do		2 60
87418	2930	do	do		801 79
87417	2928	do	do	1871	5 00
85821	3413	Jonathan Bryant	do	1865	80 00
87419	3505	Boston and Albany R. R. Co.	do	1868-1882	137 23
² 85959	3726	Elisha Burchfield	do	1864	13 50
³ 86953	3978	Baltimore and Ohio R. R. Co.	do	1883	87 50
87020		do	do	1883	87 50
86955	4046	Barker Brown	do	1863	84 00
90153	4146	Baltimore and Ohio R. R. Co.	do	1881	28 14
¹ 84453	1139	Chicago, Rock Island and Pacific R. R. Co.	do	1882	2 53
³ 81102	2898	Central Pacific R. R. Co.	do	1884	471 25
75353	⁴ 2508	do	do	1874	938 75
81937	⁵ 8311	do	do	1884	24 27
85517	3977	James H. Coffey	do	1864	30 00
89756	4191	Chicago, Rock Island and Pacific Rwy. Co.	do	1882	41 81
77702	4276	James Criggan (true name James Cragen).	do	1864	101 75
73328	2198	Central Pacific R. R. Co.	do	1883	5 54
78574	6392	do	do	1884	1,298 04
78531	6574	do	do	1884	297 82
⁶ 78812	6381	do	do	1884	12 71
⁶ 76622	5639	do	do	1884	6,596 23
75550	5540	do	do	1883	214 04
⁶ 75550	5540	do	do	1884	13,892 87
⁶ 77779	5538	do	do	1884	9,583 53
74589	6916	do	do	1883	30 60
74589	2188	do	do	1883	19,779 32
⁶ 75491	5541	do	do	1884	25,479 58
75491	6858	do	do	1884	32 61
78399	6229	do	do	1884	20,623 99
65879	2236	do	do	1883	35,447 29
74591	2209	do	do	1882	11 07
74591	2209	do	do	1883	14,536 69
74591	6892	do	do	1883	23 36
⁶ 77780	5515	do	do	1884	11,232 67
66635	2210	do	do	1882	88
66635	2210	do	do	1883	17,318 62
66635	6894	do	do	1883	122 99
76935	5067	do	do	1884	8,027 32
73398	1661	do	do	1883	2 21
75009	2514	do	do	1883	7,750 75
74674	2197	do	do	1883	31 69
74674	6889	do	do	1883	69
74590	5617	do	do	1883	153 86
75117	6882	do	do	1884	79 14
65089	2527	do	do	1882	113 69
65089	2527	do	do	1883	27,768 21
65089	6893	do	do	1883	6 92
74991	6883	do	do	1884	81 18
74590	2141	do	do	1883	47,599 76
84453	1139	do	do	1882	69
88901	3515	East Tennessee, Virginia and Georgia R. R. Co.	do	1875	73 02

¹ See 50 per cent. of arrears.

² See list Cavalry and artillery horses.

³ See list Regular supplies.

⁴ Of 1884.

⁵ Of 1885.

⁶ See list Signal Service transportation.

Reported by the Third Auditor and Second Comptroller, &c—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
88156	4322	Feldmeyer, Gotlieb.....	Transportation of the Army, 1884 and prior years. (Sec. 1133, Rev. Stat.)	1861-1865	\$400 00
88382	3006	Galveston, Harrisburg and San Antonio Rwy. Co.	do	1884	27 50
88383	3007	do	do	1883	52 85
85794	3791	Gunderman, George W.....	do	1865	64 75
85491	4277	Greeson, Thomas deceased (true name Thomas Greason), M. Greason, father of.	do	1865	6 00
85072	3219	Hardin, William	do	1864	30 00
82682	3298	Hayden, George, deceased; Mary E. Hayden, administratrix.	do	1861-1863	150 00
¹ 15375	4371	Ingersoll, John S., deceased; James O. Ingersoll and four others, children and only heirs.	do	1863	16 00
² 89033	3822	Kansas City, Fort Scott and Gulf R. R. Co.	do	1883-1884	106 70
84453	1139	Lake Shore and Michigan Southern Rwy. Co.	do	1882	6 85
75852 84444	2952	McMinn, Daniel	do	1862	50 00
88813	3339	Morgan, Henry	do	1883	4 50
88884	3510	Mexican National Rwy. Co. (lessee of the Texas-Mexican Rwy.)	do	1884	2 88
³ 2962 85125	3614	Moan, James	do	1863	1,000 00
84453	1139	New York Central and Hudson River R. R. Co.	do	1882	3 75
⁴ 88411	3170	Northern Pacific R. R. Co.	do	1884	14
84453	1139	Old Colony R. R. Co.	do	1882	2 00
87840	2949	Oregon and California R. R. Co., West Side Division.	do	1883	192 13
88404	3179	Oregon Railway and Navigation Company.	do	1884	6 75
89327	3937	do	do	1884	64 91
87274	4343	Parker, Philip	do	1865	38 50
81960	4573	Pieper, Henry, deceased; Mrs. Anna Eisenhardt, late widow of.	do	1862	77 88
87973	4569	Quinlan, John (true name John Quinlin).	do	1865	52 50
85379	2953	Shertz, Henry W.	do	1862	17 33
79066	3730	Sisco, William, deceased, Mrs. Mary Sisco, executrix.	do	1863-1865	115 87
76613	3760	Sullenger, Gabriel W.	do	1863	89 00
85592	3810	Stillwell, Morris	do	1863	43 33
⁴ 86268	3979	Saint Louis and Cairo Short Line	do	1880-1882	23 36
89473	4700	Smith, Henry	do	1864	13 00
59039	4356	Trabing, Augustus, <i>et al</i>	do	1881	876 38
90521	4408	Texas-Mexican Rwy Co.	do	1882	10 34
90104	4068	Waterfield, John C.	do	1882	3 00
					280,167 98
88287	3005	Atchison, Topeka and Santa Fé R. R. Co.	Fifty per centum of arrears of Army transportation due certain land-grant railroads, 1884 and prior years (acts June 20 and August 5, 1882).	1883	9 89
⁵ 88335	3265	do	do	1883, 1884	282 42
⁵ 88181	3338	do	do	1883, 1884	117 91

¹ See list Cavalry and artillery horses.² See list Signal Service transportation.³ See Barracks.⁴ See list 50 per cent. of arrears.⁵ See list Army transportation..

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
¹ 88704	3372	Atchison, Topeka and Santa Fé R. R. Co.	Fifty per centum of arrears of Army transportation due certain land-grant railroads, 1884 and prior years (acts June 20 and August 5, 1882).	1882, 1883	\$752 32
² 88353	3934	do	do	1883	153 83
² 89431	3968	do	do	1883	1 76
² 87639	4563	do	do	1880 ³	151 94
² 87635	4579	do	do	1881	1,244 99
² 89355	4625	do	do	1883, 1884	413 72
² 84453	1139	Chicago, Rock Island and Pacific R. R. Co.	do	1882	2 18
88096	3813	Chicago, Burlington and Quincy R. R. Co.	do	1884	19 49
89099	3939	Chicago, Rock Island and Pacific Rwy. Co.	do	1884	4 28
89645	3940	do	do	1883	7 10
89627	3941	do	do	1883	674 49
89700	3985	do	do	1882-1884	9 22
89640	4030	do	do	1881	161 55
53860	2929	Grand Rapids and Indiana R. R. Co.	do	1876-1879	52 76
91037	4565	Illinois Central R. R. Co.	do	1880 ³	1 12
88202	2907	Missouri Pacific Rwy. Co.	do	1881	3 18
88260	2942	do	do	1882	1 02
88348	2956	do	do	1882	112 71
88346	2957	do	do	1882, 1883	1 99
88349	2958	do	do	1882, 1883	12 80
88350	2959	do	do	1882, 1883	6 30
88347	2960	do	do	1881, 1882	1 74
88042	2962	do	do	1882, 1883	18 63
88065	2975	do	do	1882	12 49
88064	3004	do	do	1882	99
88046	3013	do	do	1883	670 80
88043	3276	do	do	1882	1,125 01
² 88411	3170	Northern Pacific R. R. Co.	do	1884	1 58
88045	3173	Saint Paul and Duluth R. R. Co.	do	1881	300 00
² 86268	3979	Saint Louis and Cairo Short Line	do	1880-1882	435 00
					6,037 56
53585	4166	Baptist church at Portland, Jackson County, Ohio, (payable to Thomas Jones (N), trustee.	Barracks and quarters, 1884 and prior years (section 1133 Rev. Stats.).	1863	14 00
(4)	2810 ⁵	Barracks and quarters, 1881 (transfer to adjust appropriations).	do	1882	724 45
39982	3795	Christian Church in Paducah, Ky.	do	1862, 1863	600 00
82705	3391	Griffin, John M.	do	1864	180 00
⁶ 54288	2948	Heintzelman, S. P., deceased; Margaret S. Heintzelman, executrix.	do	1865	177 60
57565	4142	Moore, William	do	1864	50 00
39321	2801	Rozer, F. W.	do	1863-1866	1,129 17
					2,875 22
(7)	1773 ⁵	Construction and repair of hospitals, 1881 (transfer to adjust appropriations).	Construction and repair of hospitals, 1884 and prior years (act June 6, 1872, et al.).	1882	1,255 43
(7)	1767 ⁵	Construction and repair of hospitals, 1882 (transfer to adjust appropriations).	do	1883	776 54
					2,031 97

¹See list Army transportation and Signal Service transportation.

²See list Army transportation

³And prior years.

⁴Quartermaster's settlement.

⁵Of 1884.

⁶See list Regular supplies.

⁷Quartermaster's account.

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
(1)	6814	Doane, Gustavus C., captain Second Cavalry.	Clothing, camp and garrison equipage, 1884 and prior years (section 1133 Rev. Stat.).	1884	\$16 4
285959	3726	Burchfield, Elisha	Horses for cavalry and artillery, 1884 and prior years (section 1133 Rev. Stat.).	1864	125 00
88623	4012	Daily, John	do	1864	120 00
(3)	2993 ⁴	Horses for cavalry and artillery, 1884 (transfer to adjust appropriations).	do	1883	831 51
(3)	4867 ⁴	Horses for cavalry and artillery, 1883 (transfer to adjust appropriations).	do	1884	1,050 00
63425	3072	Ingram, Henry	do	1864	125 00
215375	4371	Ingersoll, John S., deceased; James O. Ingersoll and four others, children and only heirs.	do	1863	115 00
52570	3340	McClure, Mitchell	do	1863	100 00
77718	4278	Porter, John H., deceased; S. S. Watkins, administrator <i>de bonis non</i> .	do	1864	150 00
29639	2935	Rose, George	do	1865	150 00
					2,766 51
85585	2994	Abbott, Stuart.....	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1865	81 25
86999	3126	Allen, Abner W	do	1862, 1863	12 50
87561	3284	Armstrong, Fletcher, deceased; Eleanor I. Armstrong, widow.	do	1863	75
87856	3327	Ashbrook, John S	do	1863, 1864	7 50
67095	3393	Ames, Monroe	do	1864, 1865	79 75
88131	3405	Addcock, Thomas, deceased; Mrs. Freeloove Addcock, mother.	do	1864, 1865	93 25
84268	3526	Allen, William, deceased; Enos A. Allen <i>et al.</i> , children of.	do	1865	51 25
88327	3767	Allen, Abram, deceased; Maria A. Allen, widow.	do	1864, 1865	51 75
89260	3796	Armstrong, William J	do	1864, 1865	14 75
89276	3797	Allen, Christopher.....	do	1862, 1863	9 25
68694	4100	Arnold, Felix W., deceased; Mary A. Arnold, widow.	do	1863	14 00
70115	4294	Allen, Franklin F	do	1864	15 75
89413	4450	Alheit, John	do	1864	8 25
89577	4659	Applegate, Samuel.....	do	1864	22 50
89883	4792	Alvis, Robert Gilbert.....	do	1863	4 00
84943	2860	Bowen, Henry, deceased; parents of.	do	1864	62 00
85764	2892	Burch, Admiral B	do	1864	18 50
86939	3015	Blanchard, Winfield S	do	1864	75
86109	3021	Bothwell, Charles H	do	1864	7 50
86061	3063	Benshoof, Peter L	do	1863	4 75
87401	3211	Breezely, John W	do	1864, 1865	5 00
87099	3214	Butts, Orin H	do	1863	2 50
87404	3251	Bright, Edwin E	do	1864, 1865	135 50
87513	3252	Burris, Jeremiah, deceased; Lucinda Burris, widow of.	do	1863	18 75
87568	3268	Burk, Patrick	do	1864, 1865	49 75
87546	3296	Bevans, Jonathan B	do	1864, 1865	7 50
87954	3354	Bleumner, Charles, deceased; Mrs. Matilda Bleumner, mother of.	do	1864	29 00
88132	3406	Bailey, James	do	1863	4 00

¹ Quartermaster's account.² See list Army transportation.³ Quartermaster's settlement.⁴ Of 1885.

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
88130	3407	Broadrup, Henry, deceased; Abigail Broadrup, widow of.	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1864	\$64 75
88281	3448	Brennan, John, deceased; Mary Brennan, widow of.	do	1864	26 50
88417	3464	Baldwin, David, deceased; Catharine Lloyd <i>et al.</i> , sisters of.	do	1865	31 25
88322	3465	Beckford, Andrew J., deceased; Mary Jane Beckford, widow of.	do	1864	7 00
88459	3492	Billings, Harmon M.	do	1863	5 25
86836	3527	Buckland, Timothy W., deceased; Jane Buckland, widow of.	do	1865	10 75
87560	3578	Brown, William	do	1862	23 00
88628	3594	Baker, Aaron H.	do	1862, 1863	19 00
88690	3596	Baldwin, Chauncey, deceased; Eleanor E. Baldwin, widow of.	do	1864, 1865	23 25
79560	3630	Burger, John C. S.	do	1864	15 00
89124	3747	Barker, Reuben D.	do	1863, 1864	4 50
66851	3772	Barten, Henry	do	1864, 1865	83 50
88971	3956	Burke, Richard, deceased; Honora Burke, widow of.	do	1863	1 25
68153	4372	Boughton, Joseph	do	1862, 1863	28 00
68164	4430	Bunyan, George (alias Samuel R. Baker).	do	1863-1865	105 25
89482	4451	Brockway, Almon C.	do	1863	1 25
89400	4543	Buzzell, George W.	do	1865	68 25
87852	4678	Batner, Benjamin	do	1864, 1865	87 75
89782	4766	Batchelder, John	do	1866	12 50
89931	4793	Barnard, Henry C.	do	1863-1865	8 25
85746	2861	Campbell, George A.	do	1864	36 00
85913	2862	Cross, Charles R.	do	1863, 1864	9 00
85961	3009	Cox, Thomas	do	1864, 1865	60 25
86834	3016	Cheesebro, Stephen	do	1865	62 50
86168	3056	Canfield, Charles K.	do	1163	3 25
85404	3057	Chitwood, Daniel, deceased; Nancy Chitwood, mother.	do	1864	33 75
86036	3058	Cummings, Solomon, deceased; Lucinda A. Cummings, widow of.	do	1864, 1865	75 00
86886	3062	Cook, George W.	do	1865	9 25
86997	3128	Collins, John	do	1864	9 75
87076	3129	Crill, Charles W.	do	1863	1 50
87339	3215	Cotton, Charles	do	1863, 1864	13 00
87169	3217	Clase, Henry	do	1864	58 00
87098	3218	Collins, Evan	do	1865	25 00
87340	3216	Chambers, Phillip, deceased; Lucy Chambers, widow of.	do	1865	40 50
87463	3253	Carrithers, John A., deceased; James T. Carrithers, brother of.	do	1865	67 25
87481	3254	Cirn, Frank	do	1863	12 50
87609	3269	Cissna, Isaac N.	do	1862, 1863	8 75
87824	3307	Cramer, Alfred	do	1863	6 75
87626	3326	Carliss, Stephen, deceased; Mary A. Carliss, widow of.	do	1863	17 75
87834	3328	Case, Russel B.	do	1863	6 75
87855	3329	Craig, Thomas W.	do	1864, 1865	77 00
87958	3355	Cole, Martin, deceased; Maria J. Cole, widow.	do	1864, 1865	25 75
87329	3349	Cornell, Nathaniel T.	do	1864, 1865	59 00
88112	3376	Colbert, Jonathan, deceased; Nancy Colbert, widow.	do	1865	31 50
88101	3377	Crum, John W., deceased; Chariar Crum, widow.	do	1864	68 00
88265	3431	Churchill, Charles H.	do	1865	1 50
88339	3467	Cunningham, James	do	1863	4 25
88321	3468	Coffey, Orville	do	1865	32 75
88419	3469	Center, Edward R., deceased; Irena T. Center, widow of.	do	1864, 1865	86 00

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
88468	3534	Cooper, Jeremiah	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1865	\$2 50
68191	3627	Chizum, James W.	do	1863	5 50
88847	3632	Creamer, David D.	do	1863	7 25
88788	3636	Carroll, Samuel A., deceased; Mary Fowler, mother.	do	1863	2 75
88972	3720	Childers, William, deceased; Keziah Childers, widow.	do	1864	67 00
89171	3770	Cook, William V.	do	1862, 1863	9 25
89263	3798	Craig, Wesley	do	1863	3 50
89277	3850	Cosgrove, Daniel	do	1862, 1863	21 20
85861	3925	Campbell, Andrew	do	1863	11 00
85229	4350	Corbett, Joseph A.	do	1862	5 00
88716	4544	Childs, George T.	do	1862	79 25
89411	4552	Courtney, Patrick, deceased; Honora Courtney, widow of.	do	1864	42 00
89675	4660	Cain, Harvey, deceased; Amy Cain, mother.	do	1865	39 25
85747	4701	Collins, Zadoc, deceased; Lydia Collins, widow of.	do	1864	23 25
89933	4794	Clemons, Myron E.	do	1863	7 25
85677	2796	Dorland, John M.	do	1864	11 25
85943	2971	Dwyer, Cyrus	do	1863	16 00
86062	3033	Diehl, Lewis H.	do	1864	6 00
86037	3059	Dutton, Andrew J.	do	1863, 1864	50 00
86542	3060	Dailey, Bartholomew	do	1864, 1865	69 75
86995	3102	Duffie, William, deceased; Margaret E. Duffie, widow of.	do	1862	56 25
87228	3257	Davis, Hiram S.	do	1864	6 75
87825	3308	Dick, Benjamin, deceased; Eliza E. Dick, widow of.	do	1864, 1865	22 00
85291	3309	Denny, James H.	do	1864	18 50
87772	3312	Doyle, James	do	1864, 1865	24 00
87947	3356	Dowd, Demetrius S., deceased; Caroline E. Dowd, widow of.	do	1864, 1865	51 75
88107	3378	Drake, Benjamin	do	1863-1865	8 50
87377	3408	Daugherty, John, deceased; Anna Daugherty, widow of.	do	1865	12 75
87171	3430	Dickinson, Madison, deceased; Mary C. Dickinson, widow of.	do	1864, 1865	24 50
88421	3493	Davis, Luther H.	do	1862, 1863	9 50
88467	3535	Davis, John L.	do	1862	2 00
85676	3567	Ditzler, Henry, deceased; Hannah Ditzler, widow of.	do	1865	49 50
88922	3669	Demander, George A.	do	1864	17 25
88927	3682	Dunn, Edward	do	1865	7 50
89215	3748	Daniels, William L.	do	1864	14 00
88735	3828	Dailey, Charles	do	1864, 1865	119 50
87223	3906	Dallas, William J.	do	1862	13 25
85914	4101	Douds, James R., deceased; Anna M. Douds, widow.	do	1865	14 25
71722	4541	Davis, Thomas W.	do	1863	40 50
85996	3010	Eddinger, Newton	do	1865	48 50
87426	3195	Estep, Cornelius, deceased; Mary Estep, widow of.	do	1862	13 75
87462	3196	Ernst, John	do	1862	13 25
87400	3205	Eaton, Marcus	do	1864	7 50
87096	3212	Evans, Clark	do	1864	15 00
87487	3255	Elliott, Andrew	do	1863	3 25
87653	3310	Elliott, Reazen G.	do	1864	15 25
88086	3357	Elmore, Robert, deceased; Frances Elmore, widow of.	do	1865	54 75
88461	3494	Edgington, William H.	do	1863	3 00
85551	3568	Eustice, Charles, deceased; Catherine S. Eustice, widow of.	do	1865	11 75
88961	3670	Edmundson, Frank, deceased; James Edmundson, son of.	do	1865	55 50

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
		WAR DEPARTMENT—Cont'd.			
		CLAIMS—continued.			
88198	3992	Earle, George W., deceased; Abigail Earle, widow of.	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1865	\$21 00
68242	3066	Finch, Washington I.	do	1864	21 25
87161	3206	Fisher, Silianus M.	do	1865	7 50
87336	3207	Freeman, Andrew J., deceased; Editha A. Freeman, widow.	do	1864	12 25
87774	3311	Fetterman, John	do	1863, 1864	8 75
87956	3358	Fulkerson, John A., deceased; Margaret Fulkerson, widow.	do	1864, 1865	39 50
88109	3379	Franklin, Samuel W.	do	1862	12 00
85353	3385	Foley, Patrick	do	1865	54 00
77103	3421	Fishbeck, Levi	do	1865	5 00
86792	3429	Finkbinder, Joseph	do	1864, 1865	73 25
88329	3457	Frink, William E.	do	1863	1 00
88691	3635	Fogtman, John	do	1864, 1865	25 00
88336	3851	Ford, Ira B.	do	1863	9 75
88478	3957	Farwell, Henry	do	1863	7 50
70228	4467	Freeman, James D.	do	1864	9 25
89676	4661	Fletcher, William	do	1862	19 25
85711	2797	Graesle, Gustave	do	1862	13 25
85768	2868	Grover, Leander G.	do	1864, 1865	14 75
85749	2947	Greene, Horace C., deceased; brothers and sisters of.	do	1865	11 25
86111	3022	Gray, George W.	do	1864	7 50
85185	2920	Gocley, Wesley W.	do	1865	3 50
86662	3067	Grube, Charles	do	1864	56 50
87438	3197	Griggs, William P., deceased; Mary A. Griggs, widow of.	do	1863	3 00
87532	3277	Grubaugh, Jacob, deceased; Harriet Grubaugh, widow of.	do	1864, 1865	35 50
87916	3332	Gilmore, George H.	do	1864, 1865	5 00
88087	3380	Gilbert, Asher	do	1864, 1865	13 50
88205	3422	Golden, William C.	do	1865	12 50
88457	3495	Gee, Herbert S.	do	1862, 1863	6 50
88483	3569	Gregg, Milton S.	do	1863, 1864	9 25
88494	3570	Gray, Robert	do	1864, 1865	25 00
86692	3631	Gilliss, Gasaway, deceased; Elizabeth Gilliss, mother.	do	1865	45 00
66684	3773	Gordon, E.	do	1865	8 75
87851	3870	Gardner, George W.	do	1862	14 00
¹ 86451	3910	Galehouse, Harvey H.	do	1865	15 00
68255	3988	Griffin, Justus P.	do	1865	15 00
68259	4468	Godfrey, David E.	do	1864	18 50
89500	4691	Garton, William, deceased; Sarah Garton, widow.	do	1864, 1865	74 25
89419	4692	Gilpin, Robert	do	1865	35 75
85750	2863	Haines, James R.	do	1863, 1864	24 25
85945	2946	Huggins, Richard	do	1864, 1865	19 75
67467	3017	Horton, Elisha S.	do	1862, 1863	7 00
86621	3034	Hiers, Durie	do	1862, 1863	12 50
66429	3035	Human, Jefferson M.	do	1863	66 25
86169	3036	Holman, Louis P.	do	1863	3 25
70278	3037	Hill, George	do	1865	6 25
86946	3100	Hayes, Patrick	do	1865	5 75
61949	3127	Heath, Henry M., deceased; only children of.	do	1865	33 75
87175	3208	Heite, Henry	do	1863	4 00
87402	3209	Hickman, Sylvester	do	1862	7 50
87160	3210	Hoyt, Charles L.	do	1864, 1865	41 25
87406	3258	Hayward, Albert L.	do	1862	9 50
88137	3411	Hodge, Perry	do	1864, 1865	15 00
76251	3437	Hawk, Daniel L.	do	1865	34 50
88323	3449	Hunter, James C., deceased; Sarah M. Hunter, widow of.	do	1865	30 75
87441	3450	Hayden, John B., deceased; Elizabeth Hayden, widow of.	do	1862, 1863	26 50

¹ See list Subsistence of the Army.

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
		WAR DEPARTMENT—Cont'd.			
		CLAIMS—continued.			
88319	3451	Hanna, John, deceased; Lucinda Hanna, widow of.	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1864	\$6 75
88379	3458	Ham, Timothy, deceased; Christiana Ham, widow of.	do	1865	29 00
88424	3496	Harrison, Robert H.	do	1863	2 75
88452	3497	Hites, William A.	do	1865	16 25
88491	3571	Hardesty, Urias, deceased; Elizabeth A. Hardesty, widow.	do	1864, 1865	39 50
88496	3589	Hice, John S., deceased; Mrs. Phoebe Hice, mother.	do	1864, 1865	53 75
67710	3595	Hatton (or Hatten), Richard A.	do	1864, 1865	134 25
88708	3633	Hunsberger, Jeremiah C.	do	1864, 1865	34 25
88689	3634	Hummel, Augustus, deceased; Mrs. Elizabeth Keck, sister.	do	1864	12 88
88792	3641	Harding, John F., deceased; parents of.	do	1864	62 75
88787	3643	Hunter, Thomas	do	1863	18 75
88877	3649	Hicks, John H. M. N., deceased; Harriet Hicks, widow.	do	1864	45 50
89120	3769	Husang, William T., deceased; Eleanora Husang, widow.	do	1863	4 00
89167	3771	Haines, Nathan G., deceased; Mary Haines, widow.	do	1863, 1864	20 25
87957	3859	Haring, David, deceased; Mary Haring, widow.	do	1865	41 50
86384	4174	Hamlin, John L.	do	1866	33 75
83879	4452	Hamilton, John D., deceased; David J. Hamilton, father of.	do	1864	27 75
68287	4469	Hovey, Lewis	do	1863	4 50
72867	4470	Henley, Samuel, deceased; Caroline (or Caroline M.) Henley, widow of.	do	1864	49 00
89281	4542	Hughes, Aaron	do	1863	6 75
89777	4662	Heath, Pierce	do	1865	20 75
89678	4663	Hall, John N.	do	1863	6 00
89578	4665	Hall, John L.	do	1865	37 00
89783	4795	Howe, Aaron S.	do	1863	6 00
89416	4806	Hodgson, Samuel, deceased; Mrs. Elizabeth Major, mother of.	do	1865	38 25
87570	3270	Johnson, Francis	do	1864, 1865	49 00
87403	3278	Jett, John P., deceased; Mary F. Jett, widow of.	do	1864, 1865	73 75
87545	3290	Jeffords, Uriah A.	do	1863	5 00
85963	3383	Janes, Lewis (or Louis)	do	1863	19 00
89048	3721	Jones, John E.	do	1863	6 75
67222	4471	Jobes, Asbury	do	1863	5 00
85610	4553	Jordan, David W., deceased; Rosannah Jordan, widow.	do	1864	19 25
89422	4693	Jones, Rufus N.	do	1865	15 75
86659	3018	Keithley, Willis A.	do	1865	12 50
87053	3159	Kelsey, George E.	do	1862, 1863	9 00
87503	3259	Kirby, Thompson	do	1863	5 00
87919	3330	Kuhn, John P.	do	1864	35 50
87925	3350	Krafft, Ferdinand H.	do	1862, 1863	6 00
88138	3412	Kinsley, William L.	do	1864	15 00
88317	3453	Knight, William H.	do	1865	33 50
70306	3597	Ketchman, William S.	do	1863, 1864	6 00
88789	3640	Kloz, John	do	1862, 1863	13 50
88853	3644	Kosseth, Frank	do	1865	44 00
87168	3829	Kinnie, Auburn, deceased; Mrs. Harriet Kinnie, mother of.	do	1865	22 25
85314	4532	Knowlton, Henry C.	do	1864	7 50
89852	4807	Kittle, Patrick, deceased; Teresa Kittle, widow of.	do	1865	25 00
85732	2864	Lusk, George Franklin	do	1863, 1865	42 50
85712	2865	Lewis, Nathaniel B., deceased; Abbie J. Lewis, widow of.	do	1864	1 00

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
85917	2866	Lathie, Henry	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, set March 3, 1885).	1863	\$18 75
85588	2945	Leonard, B. C.	do	1864, 1865	10 50
85928	2921	Long, Charles J.	do	1865	26 00
86838	3104	Luckett, Frank	do	1865	26 25
87405	3260	Legg, Daniel B.	do	1864	12 25
87332	3261	Looker, Levi	do	1864	9 75
87530	3273	Lenhart, Hiram	do	1863	4 50
87775	3312	Lynch, James	do	1864	2 50
87831	3331	Larrick, Jacob, deceased; Rachel Larrick, widow of.	do	1863, 1864	9 75
88199	3409	Lightner, Michael	do	1865	48 00
88858	3645	Laramy, Moses, deceased; Theatissa Laramy, widow.	do	1864, 1865	48 25
88851	3646	Long, James	do	1863	4 00
83735	4023	Leighton, Byron D.	do	1865	31 50
89625	4666	Lees, William, deceased; Anna M. Lees, widow of.	do	1863	3 25
85680	2798	Merriman, Albert M., deceased; Mary S. Merriman, widow.	do	1864, 1865	42 50
85770	2867	Masters, Amos	do	1864	3 50
85829	2873	Manchester, Rinaldo	do	1863	4 00
85187	2922	Miller, William D.	do	1865	5 00
85918	2924	Madden, John	do	1865	21 75
85733	2925	Moore, George W., deceased; Mrs. Hannah Moore, mother.	do	1862, 1863	51 25
85930	2972	Murphy, Daniel, deceased; Margaret Murphy, widow.	do	1864	55 75
86017	3011	Montanto, Louis	do	1865	2 00
86653	3019	McKinney, M. V. B.	do	1863	24 25
86112	3025	Miller, G. W.	do	1863, 1864	25 25
86063	3026	Marlow, Reuben	do	1863	6 00
86452	3027	McCauley, William	do	1863	4 75
86372	3029	Murphy, Milton F.	do	1864, 1865	53 25
86371	3068	Moore, Edward	do	1864	17 50
86945	3101	Mehan, John, deceased; Cordelia Mehan, widow.	do	1865	10 50
86948	3103	Morehead, John	do	1862, 1863	12 75
87502	3263	Mann, William	do	1865	7 50
87610	3279	Mann, Moses	do	1863, 1864	22 25
80220	3333	Musser, Benjamin, deceased; sisters of.	do	1865	52 50
87953	3370	Murphy, Daniel	do	1864	13 00
88275	3428	Martin, William	do	1863	18 50
88262	3432	Melendy, Peter P.	do	1864	5 00
88320	3454	Musser, Abraham, deceased; Nancy Musser, widow of.	do	1864	39 25
88416	3455	Minzler, John	do	1864	13 25
88458	3498	McNeeley, Godfred D.	do	1864	7 25
88460	3499	McNamee, Cornelius	do	1864, 1865	45 75
88629	3590	Mong, George O.	do	1865	19 00
88707	3591	Metcalf, Levi E.	do	1863, 1864	6 00
88770	3642	McGenley, William	do	1864	21 00
88245	3647	Myers, Joseph, deceased; Mary A. Myers, widow.	do	1865	31 00
88850	3648	Mineely, John	do	1862, 1863	12 50
88246	3727	McGee, Jackson, deceased; Catharine McGee, widow.	do	1865	19 75
89173	3744	Muldrew, A. W.	do	1863, 1864	4 50
67246	3930	Monett, John	do	1864	58 00
85232	4429	Morrison, Rice	do	1882, 1863	32 25
87516	4531	Martin, James O.	do	1864	16 50
89406	4554	McQuiston, Alexander	do	1865	48 25
89596	4668	McKinley, James P., deceased; brothers and sisters of.	do	1863, 1864	17 50
89930	4808	Moodix, Frederick	do	1865	77 50
86369	4809	McMacking, Wesley, deceased; heirs of (only children).	do	1864	23 75

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
		WAR DEPARTMENT—Cont'd.			
		CLAIMS—continued.			
86547	3028	Newman, John.....	Commutation of rations to prisoners in war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1864	\$42 50
87333	3262	Nichols, Edward P.....	do.....	1863	2 50
66999	3427	Northcott (or Northcutt), Starking.	do.....	1864, 1865	91 00
88476	3528	Nickerson, Andrew A.....	do.....	1864	8 25
88482	3572	Nickerson, Dean, deceased; Phèbe A. Nickerson, widow of.	do.....	1865	44 50
85773	3673	Newbert, Ambrose, deceased, alias Jas. Burke; brothers and sisters of.	do.....	1864, 1865	52 50
89135	3745	Nicholas, S. C.....	do.....	1864	13 25
86620	3023	Oliver, Theodore.....	do.....	1864	7 50
87052	3160	Odell, Benjamin, deceased; Martha A. Odell, widow of.	do.....	1864	7 50
85484	3291	Olt, Albert, deceased; Makareus Olt, father of.	do.....	1863, 1864	3 75
69225	3426	O'Hanlon, Daniel.....	do.....	1862, 1863	26 50
88423	3500	O'Sullivan, John D., deceased; Beatrice F. O'Sullivan, mother of.	do.....	1865	37 75
88633	3592	Oliver, Thomas.....	do.....	1864, 1865	77 00
89503	4696	Olcott, William, deceased; Jas. R. Olcott <i>et al.</i> , children of.	do.....	1865	35 75
67554	2926	Poland, Thomas, deceased; Susan J. Poland, mother.....	do.....	1864	71 50
86198	3030	Park, Abraham.....	do.....	1863	7 50
87078	3161	Parkinson, Brown M.....	do.....	1863	3 75
87051	3162	Prescott, William.....	do.....	1863	3 00
87163	3256	Paschal, T. P., deceased; Stephen and Rebecca Paschal, parents.....	do.....	1864, 1865	28 50
87280	3264	Pike, James M.....	do.....	1863	3 75
87857	3316	Price, Thompson.....	do.....	1863	3 25
87830	3321	Perry, James.....	do.....	1863	24 00
87854	3322	Price, Andrew.....	do.....	1863, 1864	8 75
88111	3386	Prindle, Bruce.....	do.....	1863	8 75
88200	3416	Plants, Reuben C.....	do.....	1862, 1863	28 00
88418	3466	Pancoast, George W., deceased, Mrs. Mary Bland, mother of.....	do.....	1863	8 75
88480	3529	Pratt, Horace, deceased; Hannah Pratt, widow of.....	do.....	1862	79 25
88201	3530	Payne, James L.....	do.....	1863	6 75
88477	3531	Pearson, James.....	do.....	1865	62 50
88469	3536	Pugh, Richard E.....	do.....	1863	3 75
88462	3575	Purcell, Sidney.....	do.....	1865	69 75
89278	3788	Potter, Oliver, deceased; Cynthia P. Potter, widow.....	do.....	1865	9 00
89538	4674	Pearce, Albert G.....	do.....	1864	62 25
85412	2799	Rich, Ansel, deceased; Cornelia Rich, widow of.....	do.....	1864, 1865	88 25
85193	2923	Rawson, Joseph D.....	do.....	1865	7 50
86658	3020	Roland, John S.....	do.....	1864	5 00
86065	3031	Rogers, Levi B.....	do.....	1863	8 75
86374	3038	Reed, Aaron, deceased, brothers and sisters of.....	do.....	1864	72 75
86887	3064	Robertson, Joseph R.....	do.....	1866	38 25
86835	3070	Rauck, Jacob.....	do.....	1863 to '65	8 50
87482	3225	Reed, Edward C.....	do.....	1862, 1863	7 75
87515	3292	Richardson, Charles.....	do.....	1864, 1865	88 25
88070	3371	Raymond, George W.....	do.....	1865	4 75
85628	3384	Ross, Henry.....	do.....	1862 to '64	182 50
88110	3387	Roberts, Edward.....	do.....	1863	10 50
88263	3424	Randall, Return R.....	do.....	1862, 1863	22 25
88278	3425	Robart, John, deceased; Jane Robart, widow of.....	do.....	1865	15 75
88324	3452	Ray, Benjamin F., deceased; Ann L. Ray, widow of.....	do.....	1865	35 00

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Cont'd.					
CLAIMS—continued.					
88377	3456	Rebhun, Valentine, deceased; Mary A. Rebhun, widow of.	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1863	\$4 00
88341	3470	Russell, Randolph R., deceased; Sophia J. Russell, widow of.	do	1864	54 00
87650	3573	Richards, Joseph, deceased; Mary Richards, widow of.	do	1864, 1865	14 25
88925	3681	Ridgley, Marion.	do	1865, 1866	6 25
88926	3683	Ruggles, Constant M.	do	1862, 1863	16 00
89195	3746	Royce, Richard L., deceased; parents of.	do	1864, 1865	75 50
89214	3763	Richards, Samuel.	do	1863	5 00
89217	3907	Reed, Levi F.	do	1862, 1863	19 00
75736	3931	Roberts, Edward P., deceased; Sarah Roberts, mother of.	do	1865	56 00
89421	4453	Rodgers, Thomas J.	do	1863	4 00
69044	4512	Reese, Gilpin, deceased; Adaline Reese, widow of.	do	1865	57 75
67809	4513	Rutherford, William A.	do	1864	14 00
89672	4667	Rauck, Lewis C.	do	1863-1865	8 50
89575	4669	Remaly, Stephen G., deceased; Catharine Remaly, widow.	do	1865	18 75
89599	4670	Richardson, Samuel P., deceased; Rebecca J. Richardson, widow.	do	1864, 1865	9 25
86651	3024	Slack, John H.	do	1864	7 50
86476	3032	Sutherland, Augustus H.	do	1864	37 25
86947	3069	Stewart, Robert	do	1863	6 75
67300	3226	Sheldon, William H.	do	1865	5 25
66529	3227	Sellers, Abram.	do	1863	19 25
87461	3228	Slack, George, deceased; Mary L. Slack, widow.	do	1865	24 75
87165	3229	Seoville, Franklin.	do	1864	22 50
87528	3272	Scott, Ephraim J., deceased; Sarah A. Scott, widow of.	do	1864	1 75
87569	3280	Sackett, James K.	do	1863	6 75
87531	3281	Schneider, Peter	do	1863	4 75
87514	3282	Sullivan, W. H.	do	1864, 1865	36 75
87566	3283	Scott, John F.	do	1863	8 75
87547	3286	Smith, William Anderson	do	1864	7 25
87548	3293	Strosnider, William A.	do	1863, 1864	52 00
87771	3314	Shillingsburg, Isaac.	do	1864	26 25
87829	3319	Steepleton, Peter	do	1863	7 00
87853	3320	Smith, William Penn	do	1862, 1863	7 25
88127	3410	Sprickerhoff, Frederick	do	1863	6 75
84769	3417	Stephenson, Francis M.	do	1864	13 25
88337	3471	Schonfarber, Nathan	do	1863	5 50
82460	3490	Shafer, Peter, deceased; John Shafer and Catharine McDasy, brother and sister.	do	1864	5 00
88481	3532	Sherrell (alias Davis), Ed., deceased; Fanny Sherrell (alias Davis), widow of.	do	1865	12 50
82631	3593	Steele, James M., deceased; Emily Steele, widow of.	do	1864, 1865	31 75
88771	3639	Sartell, Charles P.	do	1864	7 50
89042	3722	Sides, Adam	do	1862, 1863	24 25
89194	3762	Sperry, Willis S.	do	1863, 1865	41 50
89213	3768	Smith, John.	do	1864	52 00
89235	3789	Stahlheber, Jacob.	do	1862, 1863	19 25
88456	3830	Stults, Sampson, deceased; Mary Jane Stults, widow of.	do	1864, 1865	26 25
87924	3908	Shenk, John M., deceased; Elizabeth J. Shenk, widow of.	do	1865	5 00
79744	3945	Shook, David	do	1877	8 00
84176	3976	Smelker, Irwin C.	do	1865	7 50
60479	4280	Solon, Nehemiah, deceased; Charles Solon, father of.	do	1865	36 75
64683	4359	Smith, Clinton G., deceased; Charles S. Smith, father of.	do	1865	15 50

Reported by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
		WAR DEPARTMENT—Cont'd.			
		CLAIMS—continued.			
88630	4381	Springer, Darius.....	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1865	\$50 50
68093	4549	Sole, William	do	1864	44 75
69058	4550	Sweat, John M.	do	1864, 1865	94 50
89624	4671	Smith, Anthony	do	1864	13 25
85754	2869	Teall, Albert E	do	1864	11 75
85776	2870	Tourtillott, Elisha T	do	1863	7 50
85755	2872	Turner, John L	do	1863, 1864	10 00
86623	3071	Thomas, E. E	do	1864	18 50
86996	3163	Tootle, Owen B	do	1863	6 75
87341	3230	Thayer, Thomas M., deceased; Emeline Thayer, widow of.	do	1864	34 00
87921	3351	Thompson, David Henry	do	1863	1 25
87923	3352	Tabor, Benjamin, deceased; Susan M. Tabor, widow of.	do	1865	5 25
87926	3353	Tully, Benjamin M	do	1864	21 00
87959	3359	Trexler, David, deceased; Sarah S. Trexler, widow of.	do	1864	9 00
87773	3574	Taber, Charles H., deceased; Sarah E. Taber, widow of.	do	1864	14 00
88677	3598	Turner, Charles C	do	1863	2 50
88896	3672	Thompson, Andy	do	1862	13 25
89216	3909	Tripp, Thomas H., deceased; Lydia A. Tripp, widow of.	do	1865	2 75
67286	4428	Tarbox, Frank L., deceased; Mary E. Sawyer, guardian of Lucilla M. Tarbox, minor and only child.	do	1864	13 00
73268	4548	Thomas, James B	do	1863	2 50
89684	4664	Taylor, Joseph H	do	1864	7 25
89679	4672	Taaffe, Joseph	do	1863	4 75
89481	4697	Trazzare, James E., deceased; Sarah E. Trazzare, widow.	do	1865	27 50
87529	3271	Underwood, Thomas, deceased; Susannah Underwood, widow.	do	1863	7 25
87559	3285	Underwood, Daniel D	do	1864	6 50
85832	2871	Van Gorder, James	do	1865	7 50
86115	3039	Vanderbilt, John, deceased; Lovenia Vanderbilt, widow.	do	1864, 1865	22 50
87164	3231	Virden, Thornton	do	1865	89 50
88338	3472	Vanalstine, Harvey, deceased; Theodore Vanalstine <i>et al.</i> , children of.	do	1864, 1865	32 50
88378	3473	Venable, William P., deceased; Clarissa M. Venable, widow.	do	1865	34 00
70472	4547	Van Lear, Joseph	do	1863	3 25
90246	4673	Vogts (or Vagts), John	do	1863	25 00
89423	4698	Vanderbelt, William, deceased; Frances E. Vanderbelt, widow.	do	1863	19 75
85949	3012	Way, John	do	1863, 1864	1 50
72013	3040	West, Joseph	do	1863	6 50
86304	3065	Warwick, Austin C	do	1863	7 50
85612	3213	Wilson, David, deceased; Mary A. Williams, mother.	do	1864	23 75
87465	3224	Welchel, Andrew J	do	1864	7 50
87376	3232	Webster, Joseph L., deceased; Minerva A. Webster, widow.	do	1862, 1863	6 75
87776	3315	Weber, Wolfgang	do	1863	18 75
87849	3317	Wyncoop, Girard I	do	1863	3 25
87625	3318	Wheelock, George C	do	1865	22 00
87832	3323	Ware, Judson C	do	1863	9 00
88088	3388	Wiggins, James, deceased; Jane Wiggins, widow of.	do	1865	39 25
64684	3402	Willson, George W., deceased, children of.	do	1864, 1865	105 50
88244	3418	Wiseman, George, deceased; Mary Wiseman, widow of.	do	1865	44 25
88203	3419	Watt, William	do	1866	27 00
88376	3474	Wood, John S	do	1865	12 50

Reported by the Third Auditor and Second Comptroller, &c. — Continued.

No. of certificate or claim.	No. of settlement.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
		WAR DEPARTMENT—Cont'd.			
		CLAIMS—continued.			
88326	3475	Williams, Joel, deceased; Elizabeth A. Williams, widow of.	Commutation of rations to prisoners of war in rebel States, and to soldiers on furlough prior to July 1, 1884 (14 Stats., 364 and 422; also deficiency appropriation, act March 3, 1885).	1864	\$18 00
88470	3533	Wallace, Lafayette	do	1865	14 00
88737	3638	Williams, Edghill B.	do	1864	13 25
88709	3666	Whittinghill, William E.	do	1865	13 75
88879	3671	Wall, John W., deceased; Allen Wall, brother of.	do	1864	19 50
88857	3680	Wollbold, Christian	do	1864	14 00
88924	3684	Wilcox, Wallace	do	1864	8 75
89134	3764	White, Wesley C., deceased; Nancy E. White, widow of.	do	1862, 1863	49 25
67351	3831	Wesby (or Wesley), John V.	do	1864, 1865	76 75
89166	3958	Worley, William A.	do	1864	7 50
87224	4415	Warner, John M., deceased; Anna C. Warner, widow of.	do	1865	43 50
67357	4551	Widber, James S.	do	1863	9 00
89681	4675	West, Bazzel	do	1864	38 50
89683	4676	Welch, Nehemiah H.	do	1865	7 50
89501	4699	Watson, William J., deceased; Jane Hoge, mother.	do	1865	46 00
72713	3761	Young, Elijah, deceased; Roxey Young, widow.	do	1863	6 00
87534	3274	Zimmerman, Emanuel.	do	1864	49 50
		Total			11,095 08

Allowed by the Third Auditor and Second Comptroller, under section 4, act of June 14, 1878.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT.				
3652	Alexander, Taylor.....	Horses and other property lost in the military service prior to July 1, 1884 (sections 3482-3487, Revised Statutes).	1864	\$30 50
3581	Ashley, Lucius F.....	do	1864	150 00
3712	Alsup, jr., Benjamin.....	do	1863	70 00
3713	Atkinson, David D.....	do	1864	150 00
3733	Anderson, Abner J. M.....	do	1864	69 22
3864	Allen, Aaron E.....	do	1864	100 00
3873	Anderson, Joseph.....	do	1863	80 00
4089	Anderson, Henry S.....	do	1864	100 00
4088	Abbott, Martin V.....	do	1863	74 40
4134	Anderson, Thomas.....	do	1865	150 00
4389	Atkinson, Silas J.....	do	1864	126 50
4388	Addington, Joseph H.....	do	1865	51 00
4534	Adkins, John A.....	do	1863	71 90
4487	Adams, Mary F.....	do	1864	50 00
4583	Adkins, Josephine (widow).....	do	1864	120 00
3477	Burris, Daniel.....	do	1862	143 00
3521	Brown, Joseph W.....	do	1864	100 00
3674	Britt, William A.....	do	1864	149 75
3653	Boone, Margaret C.....	do	1864	30 59
3629	Brown, Allen.....	do	1864	50 00
3628	do	do	1864	50 00
3583	Bristow, James H.....	do	1863	60 00
3582	Baker, Simeon A.....	do	1864	150 00
3734	Benge, James.....	do	1861	158 10
3735	Bird, Clement M.....	do	1862	100 00
3865	Boren, Mary D.....	do	1861	150 00
3776	Brown, George C.....	do	1864	125 00
3874	Bryan, James S.....	do	1863	155 00
3765	Barb, Jacob.....	do	1864	89 98
3892	Barnes, Thomas J. (father).....	do	1863	110 00
3893	Briggs, George O.....	do	1877	50 00
3894	Beggs, Robert.....	do	1863	121 40
4094	Brown, Ira.....	do	1862	60 00
4095	do	do	1862	128 40
4091	Breithaupt, Charles F.....	do	1863	59 46
4092	Branch, John.....	do	1862	139 50
4090	Brunjes, Henry.....	do	1863	85 00
4093	Blanton, James M.....	do	1864	94 80
4113	Bruce, Daniel C.....	do	1864	121 40
4115	Bass, Josiah.....	do	1864	73 60
4116	do	do	1864	97 00
4114	Black, Robert M.....	do	1864	175 93
4135	Bronson, Stephen.....	do	1863	200 00
4136	Bales, Jacob W.....	do	1862	168 20
4157	Baker, William.....	do	1862	31 60
4231	Bryan, Lovel.....	do	1864	147 68
4213	Barnfield, Thomas H.....	do	1865	135 00
4214	Beakes, George M.....	do	1864	172 00
4286	Byars, Sarah Ann (widow).....	do	1864	163 50
4390	Butler, William A.....	do	1863	94 00
4435	Blagg, Benjamin F.....	do	1863	160 20
4536	Bryant, Lorenzo D.....	do	1864	96 00
4434	Bratton, John B.....	do	1864	88 00
4433	do	do	1864	89 40
4432	do	do	1864	130 00
4488	Bryant, Nancy J.....	do	1864	50 00
4454	Broyles, Columbus.....	do	1863	96 80
4436	Buskirk, John P.....	do	1862	70 00
4519	Balderston, Jacob M.....	do	1864	181 83
4535	Burgess, George W.....	do	1862	72 20
4503	Bilderback, William L.....	do	1862	83 20
4502	Busby, Thomas.....	do	1864	110 00
4587	Brooks, Jesse P.....	do	1863	150 00
4584	Boren, Lasson B.....	do	1864	173 93
4586	Brees, Joseph.....	do	1863	138 50
4585	Bartlett, Aurelius T.....	do	1863	125 00
3522	Chaney, John.....	do	1862	200 00
3656	Cooper, Angelina (widow).....	do	1864	113 40
3655	Cates, James M.....	do	1863	100 00
3654	Caldwell, R. A.....	do	1863	150 00
3777	Clark, B. F.....	do	1863	146 00

Allowed by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Continued.				
3766	Choate, Aaron C.....	Horses and other property lost in the military service prior to July 1, 1884 (sections 3482-3487, Revised Statutes).	1863	\$80 00
3896	Clemans, G. S.....	do	1864	125 00
3895	Crabtree, Melissa T. (widow).....	do	1863	102 20
4004	Christerson, A. H. (guardian).....	do	1863	132 40
4117	Cossairt, Jacob.....	do	1863	200 00
4158	Cunningham, Anna B. (widow).....	do	1863	118 40
4287	Crocket, William.....	do	1864	136 75
4288	Cox, Ephraim W.....	do	1864	148 50
4394	Carver, A. M.....	do	1863	60 38
4397	Carney, Arthur E.....	do	1865	90 00
4370	Cash, Augustus.....	do	1864	45 00
4391	Carver, A. M.....	do	1863	66 00
4392	Crump, James G.....	do	1864	109 20
4393	Calhoun, John C.....	do	1863	96 50
4490	{ Creach, Mary A. (administratrix)	do	1864	102 80
	{ Creach, John F. (administrator)	do		
4491	Conrad, George A.....	do	1862	80 00
4457	Croswell, Micah S.....	do	1864	125 00
4438	Creach, Eliza E. (widow).....	do	1863	98 00
4455	Courtney, Matilda (administratrix).....	do	1861	110 00
4521	Conly, J. Griffin.....	do	1864	175 00
4456	Caywood, James M.....	do	1864	114 60
4520	Compton, Hiram N.....	do	1862	121 00
4437	Cooper, Edward S.....	do	1862	140 00
4590	Cary, Malinda E. (widow).....	do	1864	125 00
4592	Claybrook, James H.....	do	1862	166 03
4588	Cloke, Albert S.....	do	1864	200 00
4593	Church, Frank.....	do	1864	195 00
4596	Christian, William L.....	do	1863	106 00
4594	Counts, John W.....	do	1861	100 00
4589	Clift, James.....	do	1864	200 00
4595	Christian, William L.....	do	1863	60 00
4591	Compton, Riley.....	do	1862	150 58
3659	Dye, W. R.....	do	1863	159 00
3657	Davis, Andrew B.....	do	1862	100 00
3658	do	do	1863	100 00
3695	Dickson, Samuel E.....	do	1864	140 00
3675	Duncan, Andrew J.....	do	1862	150 00
3852	Druen, Benjamin F. (administrator).....	do	1863	158 65
3778	Donaldson, John.....	do	1863	115 00
3911	Devers, John A.....	do	1864	190 98
3912	Dodson, John.....	do	1856	200 00
4005	Dean, Nathan.....	do	1863	110 00
4096	Dufour, John B.....	do	1862	900 00
4160	Duncan, Daniel B.....	do	1863	150 00
4161	do	do	1864	150 00
4159	do	do	1863	120 00
4162	Dyer, George R.....	do	1864	151 00
4163	do	do	1864	173 18
4164	Demo, Delbert.....	do	1862	70 00
4215	Deweese, Meriday.....	do	1864	125 00
4271	Daggy, Levina J. (widow).....	do	1863	128 08
4270	Draper, Robert A.....	do	1863	125 86
4289	Drenon, James S.....	do	1864	165 00
4492	Deakins, William.....	do	1862	86 00
4494	Dunlap, Robert E.....	do	1863	87 20
4495	Darby, William P.....	do	1861	104 00
4533	Duncan, Nathaniel E.....	do	1862	169 00
4489	Duke, William W.....	do	1864	50 00
4493	Dunn, Henry C.....	do	1862	133 18
4599	Draden, James.....	do	1864	143 25
4605	Davis, James M.....	do	1864	125 00
4601	Dow, Harlan P.....	do	1863	140 00
4600	Duffield, William (father).....	do	1865	125 00
4598	Darragh, Archibald B.....	do	1864	200 00
4597	Douglas, A. G. (administrator).....	do	1863	131 50
4602	Dent, M. L.....	do	1863	75 00
4603	do	do	1863	115 00
4604	do	do	1863	110 00
3441	Evans, Richard.....	do	1864	100 00
3696	Elder, Martin.....	do	1864	129 25

Allowed by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Continued.				
4165	Echols, Carlos (son and heir at law)	Horses and other property lost in the military service prior to July 1, 1864 (sections 3482-3487, Revised Statutes).	1863	\$139 60
4216	Emmick, John W	do	1865	175 00
4290	Elliott, Seborn B	do	1865	100 00
4458	Erpelding, Peter	do	1856	75 00
4617	Evans, Karon F. (widow)	do	1863	46 60
4608	Eckhart, David	do	1863	95 00
3545	Fulton, John W	do	1864	145 00
3660	Farnsworth, Henry F	do	1864	80 45
3714	Francis, Lyon S	do	1863	200 00
3779	Friend, John	do	1862	125 00
3853	Fanning, James	do	1863	100 00
3866	Foster, Edmond	do	1864	89 25
3913	Filbert, Francis M	do	1864	73 80
4181	Francis, William L	do	1865	75 00
4178	Ford, William	do	1863	89 00
4179	Fox, Milton S	do	1863	100 00
4138	Fare, William G	do	1863	85 00
4137	do	do	1863	130 00
4180	Fee, Franklin W	do	1863	200 00
4176	Freeman, Lewis	do	1863	71 63
4177	do	do	1863	101 43
4272	Fairchild, Beulah W. (widow)	do	1864	200 00
4265	Fannon, William L	do	1863	80 00
4291	Fletcher, John H	do	1863	120 40
4504	Fowler, Hadley B	do	1862	200 00
4609	Foot, Johnson O	do	1863	150 00
4611	Fountain, Samuel	do	1864	125 00
4610	Folsom, Charles M	do	1863	147 78
3442	Goforth, Zachariah	do	1862	98 00
3443	Gant, John A	do	1864	125 00
3478	Griswold, W. C. (administrator)	do	1855	150 00
3479	Gay, Henry	do	1864	142 78
3715	Guillermine, Peter	do	1863	90 00
3716	Gideon, John A	do	1863	139 11
3736	Gant, John O. K	do	1864	88 00
3898	Goodwin, Eliza J. (executrix)	do	1861	83 00
3780	Graham, W. T	do	1864	140 00
4097	Goucher, David	do	1864	174 78
4182	Gosline, Rachel L. (widow)	do	1861	84 00
4217	Gleason, John	do	1865	200 00
4332	Githens, Samuel T	do	1864	100 00
4292	Graham, John	do	1864	160 00
4398	Goodwin, William W	do	1864	147 03
4459	Guess, William	do	1847	76 00
4615	Gault, James	do	1864	150 00
4616	Greer, Joseph	do	1862	118 40
4612	Gaar, N. H	do	1847	28 78
4613	Griswold, W. C. (administrator)	do	1855	140 00
3781	Howe, James W	do	1863	108 80
3742	Holloway, John	do	1865	75 00
3897	Heathman, John	do	1864	130 00
3914	Holland, James M	do	1863	160 00
3480	Hays, Joseph W	do	1864	125 00
3523	Harrold, Henry	do	1846	36 00
3444	Harrelson, Rollins	do	1864	137 00
3661	Hayden, Robert K	do	1862	59 00
3546	Harle, Thomas B	do	1861	160 00
3718	Hudlow, George W	do	1864	85 00
3676	Humphrey, Benjamin T	do	1861	85 00
3717	Hendricks, William	do	1862	134 50
3741	Haws, Allen P	do	1863	100 00
3824	Hart, James M	do	1863	60 27
3823	do	do	1863	173 43
4006	Henderson, William F	do	1865	200 00
4010	Hunt, John D	do	1862	85 20
4104	Hamilton, David	do	1863	165 00
4105	do	do	1863	165 85
4103	Haney, Thomas	do	1861	91 43
4119	Hoyt, Edwin, jr	do	1862	200 00
4120	do	do	1863	100 00
4118	Huckabey, Robert	do	1864	75 00

Allowed by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Continued.				
4183	Hine, Jesse A.....	Horses and other property lost in the military service prior to July 1, 1864 (sections 3482-3487, Revised Statutes).	1864	\$141 50
4140	Henderson, Samuel C.....	do.....	1848	70 00
4139	Hill, Amanda J. (administratrix).....	do.....	1864	117 03
4218	Hayes, Mahala (administratrix).....	do.....	1863	200 00
4221	Hill, R. C.....	do.....	1864	70 00
4222	Haley, Benjamin R.....	do.....	1862	140 00
4223	do.....	do.....	1862	125 00
4232	Hedge, Eliza (widow).....	do.....	1864	164 00
4233	Harter, Henry.....	do.....	1862	99 60
4219	Highman, Jane.....	do.....	1862	150 00
4220	Haynes, Harbert W.....	do.....	1862	60 60
4400	Henley, Joshua L.....	do.....	1864	125 00
4399	Horton, Robert.....	do.....	1863	160 00
4401	Hager, Charles.....	do.....	1864	85 00
4460	Houston, Nancy C. (widow).....	do.....	1863	101 65
4496	Highnight, Andrew.....	do.....	1863	40 20
4461	Holwell, John.....	do.....	1863	174 00
4522	Hart, Noah.....	do.....	1863	70 40
4523	Hawken, John.....	do.....	1863	75 00
4537	Hobbs, Isaac S.....	do.....	1864	124 98
4506	Hattenhauer, Gustavus F.....	do.....	1864	150 00
4505	Hardwick, Margaret, widow.....	do.....	1862	82 68
4620	Hudson, Aaron R.....	do.....	1863	172 78
4621	Hutton, Thomas J. (administrator).....	do.....	1862	110 00
4622	Ham, John W.....	do.....	1864	102 00
4618	Hedgepeth, Calvin.....	do.....	1864	96 00
4624	Henry, Joseph.....	do.....	1864	150 00
4619	Hyde, John McE.....	do.....	1862	174 88
4623	Huddleston, Thomas.....	do.....	1864	175 83
4462	Isaacs, Enos.....	do.....	1864	73 00
4463	Ivey, John.....	do.....	1864	125 00
3697	Johnson, Jacob Q.....	do.....	1863	150 00
4184	Johnson, Curtis.....	do.....	1864	194 88
4185	do.....	do.....	1864	194 88
4234	Jenkins, Wilton A.....	do.....	1862	175 00
4293	Johnson, J. C.....	do.....	1862	135 00
4295	Jarrell, Sanford.....	do.....	1863	85 00
4507	Johnston, George H.....	do.....	1863	200 00
4639	Johnston, John.....	do.....	1862	125 00
4636	Jackson, Arthur B.....	do.....	1864	125 00
4638	Jones, George W.....	do.....	1864	115 00
4637	do.....	do.....	1863	75 00
4122	Karley, Pleasant H.....	do.....	1864	115 00
4121	Kittinger, Martin S.....	do.....	1864	160 00
4186	Kanada, Edmond B.....	do.....	1861	121 50
4296	Keel, James B.....	do.....	1864	198 50
4402	Knipschild, Jacob.....	do.....	1864	97 50
4497	Keeling, Uriah L.....	do.....	1862	120 00
4640	Kinsey, David J.....	do.....	1862	122 60
4642	Kinman, Ann (widow).....	do.....	1863	200 00
4641	Kittinger, Martin S.....	do.....	1863	200 00
3445	Lancaster, William A.....	do.....	1862	147 60
3737	Lewis, Jesse B.....	do.....	1856	139 73
4106	Lane, Cyrus H.....	do.....	1864	120 00
4107	Lindsay, John.....	do.....	1865	200 00
4141	Lee, Richard M.....	do.....	1847	84 40
4148	Lewis, Isaac.....	do.....	1864	109 60
4403	Le Blond, John B.....	do.....	1863	200 00
4472	Lucas, Nathaniel.....	do.....	1863	73 60
4524	Lyne, Thomas.....	do.....	1877	300 00
4643	Lynn, John T.....	do.....	1863	100 00
4645	Lambett, Wesley N.....	do.....	1864	92 00
4644	Lauer, Henry.....	do.....	1864	65 00
3481	Mitchell, B. B.....	do.....	1864	150 00
3547	Montgomery, B. F.....	do.....	1864	125 00
3677	Maxwell, Robert M.....	do.....	1863	104 60
3783	Mintzer, S. J. W.....	do.....	1862	200 00
3782	McCullough, William R.....	do.....	1864	125 00
3899	Myers, John H.....	do.....	1864	130 00
3900	Morris, Richard L.....	do.....	1862	44 02
3915	Miller, William M.....	do.....	1863	90 50

Allowed by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Continued.				
3990	Mirise, Henry W	Horses and other property lost in the military service prior to July 1, 1884 (sections 3482-3487, Revised Statutes).	1864	\$123 40
4108	Mallan, Anna (widow)	do	1862	140 00
4124	Marshall, Elias M.	do	1862	100 00
4123	McElhannon, John	do	1862	63 88
4149	McMillan, Andrew J.	do	1863	50 00
4187	McLahlan, James	do	1864	100 00
4235	McCay, Susan C., and Chesney, J. C. (executors.)	do	1864	170 00
4267	McKnight, Joseph	do	1865	200 00
4266	do	do	1865	175 00
4297	McMullin, Nathaniel	do	1861	108 40
4404	Maurie, Allison H.	do	1864	27 80
4420	McConnell, Daniel	do	1862	48 83
4405	McQueen, Nathan	do	1863	75 00
4475	McClanahan, James	do	1862	115 00
4440	Miller, Charles E.	do	1863	172 60
4439	Mullens, James A.	do	1864	32 00
4474	McLain, William D.	do	1864	200 00
4538	Marshall, Benjamin M.	do	1864	100 00
4526	McDonnald, Noah A.	do	1864	105 18
4525	Marsh, James W.	do	1862	125 00
4473	Morgan, Erastus	do	1863	99 60
4498	McDowell, John	do	1863	29 86
4197	Martin, George G.	do	1864	174 43
4194	McDaniel, James	do	1863	134 64
4196	McElroy, John H.	do	1864	125 00
4195	Merrell, Azariah M. (administrator)	do	1863	141 43
4652	Myers, Charles H.	do	1863	75 00
4655	Mosher, Mark A.	do	1863	200 00
4656	Maples, Noah	do	1864	53 00
4654	Martin, George W.	do	1865	200 00
4650	Marsh, James W.	do	1863	100 00
4653	Mitchell, Thomas	do	1864	169 31
4646	Morton, Anderson	do	1862	110 00
4649	Martin, Timothy	do	1863	100 00
4651	Meeke, Warren C.	do	1864	98 00
4657	McAlpin, David J.	do	1864	100 00
3867	Norton, H. D.	do	1864	121 00
4109	Nash, Thomas W.	do	1864	154 21
4150	Newson, Joseph	do	1862	170 18
4275	Nichols, Ellis R.	do	1861	135 00
4409	Nebinger, Charlotte (widow)	do	1864	200 00
4658	Nations, Curry	do	1864	140 00
4527	Neff, John (administrator); Neff, Mary E. L. (administratrix.)	do	1862	165 40
3916	O'Neill, Mary (administratrix)	do	1862	170 00
4298	Ogg, Thomas J.	do	1864	168 00
4679	Owens, William	do	1847	93 07
3482	Philips, Jane (lately widow)	do	1863	79 12
3483	Padgett, Elisha	do	1856	175 00
3548	Passegger, Francis	do	1863	200 00
3678	Phillips, Nelson	do	1862	32 00
3662	Parker, Marideth W.	do	1864	75 00
3663	Pittinger, John B.	do	1864	164 68
3552	Passegger, Francis	do	1864	200 00
3550	do	do	1864	200 00
3549	do	do	1863	200 00
3551	do	do	1864	200 00
4110	Pierce, Amasa G.	do	1864	111 00
4125	Parker, Nelson S.	do	1864	122 18
4152	Payne, George W.	do	1862	139 35
4151	Parkell, Alonzo B.	do	1862	200 00
4154	Parkhurst, David S.	do	1862	130 20
4199	Price, William	do	1863	80 00
4236	Pond, John A.	do	1863	150 00
4268	Pitney, Owen S.	do	1864	166 50
4499	Porter, Wilbur F.	do	1864	147 68
4441	Purdy, John W.	do	1862	100 00
4477	Peyton, Vincent	do	1863	100 00
4528	Patton, Charles U.	do	1864	200 00
4479	Peyton, Vincent	do	1864	130 00

Allowed by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
WAR DEPARTMENT—Continued.				
4478	Peyton, Vincent.....	Horses and other property lost in the military service prior to July 1, 1884 (sections 3482-3487, Revised Statutes).	1864	\$100 00
4508	Prosize, J. A.....	do	1863	125 00
4500	Prichard, James E.....	do	1864	96 90
4476	Price, Michael.....	do	1847	41 40
4198	Phipps, John M.....	do	1864	200 00
4680	Pattison, Rufus P.....	do	1863	200 00
4682	Parrish, Henry C.....	do	1864	107 40
3484	Roberts, Benjamin.....	do	1862	90 00
3485	do	do	1863	115 00
3524	Rickman, Nancy Ann (widow).....	do	1864	200 00
3553	Robb, Bettie J. (widow).....	do	1847	121 00
3825	Roberts, William M.....	do	1864	140 00
3784	Ritchie, Benjamin F.....	do	1864	100 00
3785	Roe, James M.....	do	1864	110 00
3921	Rolston, William F.....	do	1864	23 18
3969	Roper, William F.....	do	1862	150 00
4273	Roseman, Mary F. (mother).....	do	1864	141 60
4274	Rodrick, David.....	do	1864	155 80
4237	Reed, Willis.....	do	1864	150 00
4299	Rains, Jesse T.....	do	1864	98 20
4411	Rhea, David.....	do	1864	179 60
4412	do	do	1865	160 00
4421	Rixon, John.....	do	1863	113 00
4444	Ross, Thomas B.....	do	1862	80 00
4443	do	do	1863	125 00
4442	Robinson, Perry G.....	do	1862	175 00
4200	Reader, Frank.....	do	1862	90 00
4201	Ristine, Henry.....	do	1863	116 83
4686	Ray, Daniel M.....	do	1864	125 00
4683	Rorty, Richard (administrator).....	do	1863	200 00
4685	Reed, Charles C.....	do	1863	129 00
4687	Randall, Caroline A. (administratrix).....	do	1864	175 00
4684	Richards, Samuel V.....	do	1862	96 00
3486	Shay, Joseph H.....	do	1864	89 00
3487	Stone, John.....	do	1863	150 46
3554	Shields, Thomas M.....	do	1863	75 00
3585	Seffner, Lydia P. (widow).....	do	1864	150 00
3584	Scott, Jesse R.....	do	1862	117 75
3738	Smith, Levi.....	do	1864	93 33
3875	Sims, Henry C.....	do	1863	56 51
3786	Smith, Josephine (widow).....	do	1864	88 00
3854	Street, Andrew J.....	do	1864	116 00
3868	Spellman, Hiram A.....	do	1862	50 00
3920	Sibole, Rosanna (widow).....	do	1864	100 00
3901	Stephens, W. H.....	do	1862	100 00
3970	Smith, Isom.....	do	1864	65 00
3991	Salter, Feriba A. (widow).....	do	1864	50 00
4008	Sutton, Ellen (administratrix).....	do	1864	100 80
4111	Shirley, Marion.....	do	1864	139 00
4128	Shirley, Nathan P.....	do	1864	135 00
4126	Smith, George W.....	do	1864	15 00
4127	Smith, Henry (father).....	do	1864	150 00
4129	Smith, John R.....	do	1865	150 00
4155	Stephens, Robert J. D.....	do	1862	80 00
4307	Stotts, William.....	do	1863	100 00
4309	Sartin, Mary A. (daughter).....	do	1863	64 40
4328	Stapleton, Jefferson.....	do	1864	155 00
4303	Schmid, George (brother).....	do	1863	16 00
4304	Schmid, John P. (brother).....	do	1863	16 00
4306	Standley, Martha A. (widow).....	do	1864	148 15
4413	Schutz, George.....	do	1864	129 00
4410	Skinner, James L.....	do	1863	47 60
4501	Shinn, Alpheus M.....	do	1864	130 40
4539	Stout, Jonathan.....	do	1864	80 50
4540	Spencer, James M.....	do	1862	30 39
4480	Sandlin, John.....	do	1861	110 40
4481	Stagg, Jessie (widow).....	do	1863	200 00
4529	Spears, Henry.....	do	1864	100 00
4510	Skilton, Julius A.....	do	1865	150 00
4509	Springs, Fields P.....	do	1864	115 00
4504	States, John.....	do	1863	86 00

Allowed by the Third Auditor and Second Comptroller, &c.—Continued.

No. of certifi- cate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expendi- ture was incurred.	Amount.
WAR DEPARTMENT—Continued.				
4203	Scott, Noah	Horses and other property lost in the military serv- ice prior to July 1, 1884 (sections 3482-3487 Re- vised Statutes).	1864	\$125 43
4202	Shafer, Elizabeth (widow)	do	1864	125 00
4702	Smith, Peter	do	1864	22 00
4707	Short, Edward J	do	1862	125 00
4728	Sparks, George W	do	1863	56 00
4706	Sherwood, Noah F	do	1863	100 00
4688	Shinn, Ransom	do	1864	101 18
4703	Standridge, Martin	do	1863	137 00
4708	Shields, Benjamin T	do	1862	124 76
4709	do	do	1862	114 60
4704	Sloan, John	do	1862	152 50
4681	Swisher, Joseph	do	1863	102 18
4705	Snider, George W	do	1865	110 00
3664	Turman, John B. C	do	1864	100 00
3922	Tunnage, Catharine (widow)	do	1862	45 00
3902	Todd, Milton	do	1864	79 60
4130	Tate, James M	do	1864	100 00
4308	Taylor, Samuel R	do	1864	150 00
4305	Turger, Catharine (sister)	do	1863	16 00
4730	Thompson, Marion	do	1863	140 00
4729	Terrell, A. T	do	1864	150 00
3525	Underwood, Sarah (widow)	do	1864	113 43
4530	Upchurch, Elizabeth (mother)	do	1864	125 00
3665	Vanbebber, Nimrod C	do	1864	125 00
4482	Vaughan, William R	do	1862	63 00
3446	Williams, Enoch G	do	1863	60 00
3556	Wells, Jordan G	do	1862	125 00
3555	Ward, Thomas H	do	1864	125 00
3679	Waters, John T	do	1864	130 00
3739	Whitmer, Berthena (administratrix)	do	1862	132 78
3743	Wooten, John	do	1863	101 00
3787	Wilson, T. P	do	1862	115 00
4131	Williams, Augustus N	do	1864	150 00
4153	Wilson, John S	do	1862	86 18
4156	Woods, Isaac N	do	1862	113 00
4240	Wilson, Richard L	do	1864	148 18
4239	Wrennick, William A	do	1864	95 00
4238	Wells, Andrew	do	1864	75 00
4269	Watkins, Calvin	do	1862	131 00
4310	Walford, David F	do	1863	101 73
4483	Wilson, J. C	do	1865	200 00
4484	Wenger, Adam	do	1865	100 00
4445	Wagaman, James J	do	1864	83 00
4446	Wright, Richard B	do	1865	98 00
4511	Williams, Green	do	1863	160 00
4205	White, James H	do	1862	65 00
4733	Walker, Elisha J	do	1863	123 30
4740	Wade, N. S. B	do	1862	63 80
4782	Wetzel, Mary C. (widow)	do	1862	122 10
4732	Wilson, James	do	1864	139 50
4731	Wagner, Philip	do	1864	100 00
4739	Wall, Ella	do	1863	113 00
4741	Warren, John	do	1862	130 00
4009	Young, Clinton	do	1863	144 60
4241	Young, Nancy (administratrix)	do	1862	82 60
3719	Ziegler, Solomon B. (administrator)	do	1864	126 50
Total				58,210 25
				421,543 18

RECAPITULATION OF WAR DEPARTMENT CLAIMS ALLOWED BY THE THIRD
AUDITOR AND SECOND COMPTROLLER.

Signal Service, incidental expenses, 1885	\$10 50
Signal Service, incidental expenses, 1884 and prior years	122 50
Signal Service, transportation, 1884 and prior years	318 26
Contingencies of fortifications	1, 159 75
Gunboats on Western rivers, 1884 and prior years	20 56
Construction and operation of a line of telegraph on the frontier settlements of Texas, prior to July 1, 1884	15
Expenses of minute-men and volunteers in Pennsylvania, Maryland, and Ohio	54 75
Rogue River Indian war, prior to July 1, 1884	1, 053 14
Twenty per cent. additional compensation, prior to July 1, 1884	159 66
Pay, transportation, services, and supplies of Oregon and Washington volunteers in 1855 and 1856, 1871, and prior years	1, 301 62
Refunding to States expenses incurred in raising volunteers	49, 826 04
Subsistence of the Army, 1884 and prior years	1, 643 43
Regular supplies, Quartermaster's Department, 1884 and prior years	1, 079 69
Incidental expenses, Quartermaster's Department, 1884 and prior years	1, 592 15
Transportation of the Army and its supplies, 1884 and prior years	280, 167 98
Fifty per cent. of arrears of Army transportation due certain land-grant railroads, 1884 and prior years	6, 037 56
Barracks and quarters, 1884 and prior years	2, 875 22
Construction and repair of hospitals, 1884 and prior years	2, 031 97
Clothing, camp, and garrison equipage, 1884 and prior years	16 41
Horses for cavalry and artillery, 1884 and prior years	2, 766 51
Commutation of rations to prisoners of war in rebel States and to soldiers on furlough, prior to July 1, 1884	11, 095 08
Horses and other property lost in the military service, prior to July 1, 1884	58, 210 25
Total	421, 543 18

*Reported by the Fourth Auditor and Second Comptroller, under section 2, act July 7, 1884
(23 Stat., p. 254).*

No. of certifi- cate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expendi- ture was incurred.	Amount.
NAVY DEPARTMENT.				
CLAIMS.				
956	John Burrows	Pay of the Navy, prior to July 1, 1884.	1854-1864	\$1, 053 69
980	F. J. Painter	do	1874	199 32
970	Joseph Cox	do	1842, 1843	56 71
1036	J. C. Bradford	do	1862-1866	1, 030 07
1121	Louis A. York	do	1870	340 36
1146	John C. Conway	do	1864-1867	110 40
1209	George A. Deering	do	1870	20 20
1242	J. A. Hawke	do	1870-1872	395 31
1268	Theodore D. Wilson	do	1870-1873	1, 193 92
1356	James Garvey	do	1862	3 13
1359	James Kane	do	1865	95 18
				4, 498 29
1330	John Corwine	Pay, miscellaneous, 1884 and prior years.	1879	83 42
1107	L. H. May	do	1884	18 24
				101 66
1141	Thomas Daley	Pay, Marine Corps, prior to July 1, 1884.	1867	33 14
1141	J. C. Putron, attorney	do	1867	3 68
				86 82
1070	Central Pacific R. R. Co., steamer division.	Transportation and re- cruiting, Marine Corps 1884 and prior years.	1881	3 00
1048	Charles Reeves	Extra pay, Pacific Squad- ron, act of March 3, 1853.	1848	339 91
1333	David Turner	Equipment of vessels, Bureau of Equipment and Recruiting, 1884 and prior years.	1882	463 30

¹Sec. 290, Revised Statutes.

Allowed by the Fourth Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
NAVY DEPARTMENT—Continued.				
CLAIMS—continued.				
1333	David Turner.....	Contingent, Bureau of Equipment and Recruiting, 1884 and prior years.	1881	\$15 00
1194	William Cameron.....	do	1865	12 54
1223	William W. Emmons.....	do	1865	11 10
1228	C. M. Loomis.....	do	1865	8 61
1239	Henry Bond.....	do	1865	18 36
1142	Charles McDermott.....	do	1864	9 60
1357	Jacob Leising.....	do	1864	12 90
				88 11
1148	John Virdin.....	Construction and Repair. Bureau of Construction and Repair, 1884 and prior years.	1884	15 00
1241	Patrick Doolan.....	do	1884	351 79
				366 79
1124	L. de Reuterskiold, Swedish and Norwegian minister, for the benefit of the heirs of Carl August Görtz, deceased.	Provisions, Navy, Bureau of Provisions and Clothing, 1884 and prior years.	1881	42 30
1157	T. J. Hogan.....	do	1884	109 50
1067	C. H. Mathews.....	do		28 80
				180 60
1320	Casper Schenck.....	Medical Department, Bureau of Medicine and Surgery, 1884 and prior years.	1884	5 00
¹ 1124	L. de Reuterskiold, Swedish and Norwegian minister, for the benefit of the heirs of Carl August Görtz, deceased.	Indemnity for lost clothing, prior to July 1, 1884.	1881	60 00
² 1253	W. L. Webster.....	do	1883	4 16
² 1174	R. R. Leitch.....	do	1883	166 67
³ 1153	Francis Havor.....	do	1846	54 00
³ 1153	A. M. Keneday (attorney).....	do	1846	6 00
³ 1334	William Reid.....	do	1864	54 00
³ 1334	William Hobbs (attorney).....	do	1864	6 00
³ 1170	Joseph J. Gilman.....	do	1864	60 00
				410 83
953	Patrick Sullivan.....	For payments on account of clothing or bedding destroyed by order for sanitary purposes, in preventing the spread of contagious diseases.	1885	14 55
966	Frank Cassidy, brother of Thomas S. Cassidy, deceased.	do	1885	11 67
966	Susan L. Reynolds, sister of Thomas S. Cassidy, deceased.	do	1885	11 67
966	Catharine Marshall, sister of Thomas S. Cassidy, deceased.	do	1885	11 67
966	Margaret Hoffner, sister of Thomas S. Cassidy, deceased.	do	1885	11 67
966	John Cassidy, brother of Thomas S. Cassidy, deceased.	do	1885	11 66
966	Hubert Cassidy, brother of Thomas S. Cassidy, deceased.	do	1885	11 66
1105	James Mallon.....	do	1863	60 00
				144 55

¹Allowed under section 289, Rev. Stats.

²Allowed under section 290, Rev. Stats.

³Allowed under section 288, Rev. Stats.

Allowed by the Fourth Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
NAVY DEPARTMENT—Continued.				
CLAIMS—continued.				
951	F. P. Gordon	Bounty for the destruction of enemies' vessels, prior to July 1, 1884.	1862	\$8 05
986	John Haley	do	1864	1 65
990	Robert Dunn, executor of the estate of Adam Duncan, deceased.	do	1862, 1864	16 94
993	Ellen McGovern, widow of John McGovern, deceased.	do	1862	11 08
1011	John Widdis	do	1862	9 39
1062	Mary Branden, widow of James McDonald, deceased.	do	1864	3 73
1133	Mary Ann Parker, sister of Levi L. Nutt, deceased.	do	1862	37 55
1145	Michael McGrail	do	1862	12 92
1315	Margaret H. Decker, widow and administratrix of the estate of Edward A. Decker, deceased.	do	1862	91 11
1315	Thomas J. McElhenny, attorney for Margaret H. Decker, administratrix.	do	1862	10 12
1317	Richard J. Shannon, son and administrator of the estate of Patrick J. Shannon, deceased.	do	1862	54 35
1317	Bernard Reilly, jr., attorney for R. J. Shannon, administrator.	do	1862	2 86
1354	Patrick Flynn	do	1862	1 83
1355	Thomas Garryte	do	1862	2 33
				263 91
949	David Harlan	For the payment of claims for difference between actual expenses and mileage allowed under the decision of the United States Supreme Court in the case of <i>Graham vs. United States</i> .	1851-1863	489 64
957	William M. Mott	do	1866	358 59
969	Merrill Spalding, executor of Enoch G. Parrott, deceased.	do	1873	248 76
975	W. A. Armstrong, administrator of Jeremiah Potts, deceased.	do	1867	265 37
1033	S. B. Davis, administrator of Alonzo B. Davis, deceased.	do	1854	1,068 40
1065	Emily M. Drury, administrator of William Mervine, deceased.	do	1857	368 60
1066	A. I. Smith, administrator of Samuel L. Wilson, deceased.	do	1870, 1880	319 72
1078	Benjamin Allston, administrator of Thomas Petigru, deceased.	do	1842, 1850	1,080 27
1001	Robert L. Harris	do	1860	119 70
1050	Albert K. Jones	do	1868	418 43
1051	Martha C. Breese, executrix of K. R. Breese, deceased.	do	1859, 1872	363 00
1057	Joseph H. Tattem, administrator of Robert L. Tattem, deceased.	do	1862-1866	476 55
1101	W. L. Bridgman	do	1864-1873	441 80
1099	John Dennett	do	1866, 1867	256 51
1108	Amos M. Lyon	do	1861-1864	242 95
1109	R. F. Baker	do	1868	522 67
1112	F. P. Bailey, administrator of James W. Shirk, deceased.	do	1859-1861	220 00
1120	John M. Stockton, administrator of William Nelson deceased.	do	1856-1860	295 10
1150	M. R. Kintzing	do	1853, 1867	1,346 21
1152	Thomas C. Walton	do	1867	287 67
1154	Theodore P. Greene	do	1861-1867	823 46
1162	R. B. Bradford	do	1873	34 13
1207	Albert S. Barker	do	1864, 1866	284 67
1210	J. W. Elliott	do	1868	515 72
1292	George A. Lyon	do	1870	244 48
1260	Anna E. Smith, daughter and only heir of Joseph Smith, deceased.	do	1840	276 10

Allowed by the Fourth Auditor and Second Comptroller, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
NAVY DEPARTMENT—Continued.				
CLAIMS—continued.				
1312	Thomas C. Stellwagen, as son of H. S. Stellwagen, deceased.	For the payment of claims for difference between actual expenses and mileage allowed under the decision of the United States Supreme Court in the case of <i>Graham vs. United States</i> .	1840	\$29 50
1312	Henry E. Stellwagen, as son of H. S. Stellwagen, deceased.	do	1840	29 49
1312	Catherine C. Stellwagen, as daughter of H. S. Stellwagen, deceased.	do	1840	29 49
1312	Mary F. Lewis, as daughter of H. S. Stellwagen, deceased.	do	1840	29 49
1319	F. M. Grayson, committee for John C. Grayson.	do	1853-1861	249 83
1319	Moberly & Rutherford, attorneys	do		23 67
1326	J. B. Murdock	do	1872	64 30
1147	Francis Winslow	do	1873	105 00
1175	John A. Lockwood	do	1862	374 37
1176	John R. Ludlow, administrator of William Jamerson, deceased.	do	1850	174 88
1358	Conway H. Arnold	do	1872	143 10
1358	J. W. Stryker	do	1872	15 90
				12,617 52
¹ 1034	Richard Nevil	Enlistment bounties to seamen prior to July 1, 1884.	1863	75 00
² 1035	Rebecca E. Raymond, mother of Alfred G. Raymond, deceased.	do	1864, 1865	180 00
² 1035	William H. Fugitt, attorney	do	1864, 1865	20 00
² 997	Olive Myrack, widow of Fredric Myrack, alias Myrick, deceased.	do	1864, 1865	33 34
² 1092	Reuben Fields	do	1864, 1865	33 34
² 1101	Harriet Vandeventer, widow of Richard Vandeventer, deceased.	do	1864, 1865	30 00
² 1101	William H. Druen, as attorney	do	1864, 1865	3 34
² 1111	A. Jerome Harder	do	1864, 1865	33 34
² 1196	Edward N. Burleigh	do	1864, 1865	33 34
² 1197	John W. Abeel	do	1864, 1865	30 00
² 1197	Charles Carroll	do	1864, 1865	3 33
² 1206	Robert Butterworth	do	1864, 1865	33 33
² 1226	Alvah C. Ferrin	do	1864, 1865	33 34
² 1237	Samuel H. Morrell	do	1864, 1865	33 34
² 1238	Cornelius C. Moyer	do	1864, 1865	33 34
² 1240	George M. Pyle	do	1864, 1865	33 34
² 1246	Charles T. Buzzett	do	1864, 1865	33 34
² 1266	Samuel Hayner	do	1864, 1865	33 34
² 1325	Jerry Hengehold	do	1864, 1865	7 50
² 1325	J. W. Drouilleard, attorney	do	1864, 1865	83
² 1255	Morris L. Wright	do	1864, 1865	33 33
² 1254	Septimus Dykes	do	1864, 1865	14 39
² 1142	Charles McDermott	do	1864, 1865	33 34
² 1143	John H. Stratton	do	1864, 1865	33 34
³ 1353	Bakrack Hollis	do	1864, 1865	300 00
⁴ 1225	Thomas Gillen, alias Henry Dale	do	1864	37 80
⁴ 1225	William H. Lusk, attorney	do	1864	4 20
⁴ 1233	A. B. Haus	do	1864	17 00
⁴ 1335	William Schowsboe	do	1864	42 00
Total				1,232 13
				\$20,752 42

¹ Act March 3, 1863.

² Act July 1, 1864.

³ Joint resolution, Jan. 13, 1864.

⁴ Joint resolution, Feb. 24, 1864.

RECAPITULATION OF NAVY DEPARTMENT CLAIMS ALLOWED BY THE FOURTH AUDITOR AND SECOND COMPTROLLER.

Pay of the Navy, prior to July 1, 1884.....	\$4,498 29
Pay, miscellaneous, 1884 and prior years	101 66
Pay, Marine Corps, prior to July 1, 1884	36 82
Transportation and recruiting, Marine Corps, 1884 and prior years	3 00
Extra pay, Pacific Squadron, act March 3, 1853	339 91
Equipment of vessels, Bureau of Equipment and Recruiting, 1884 and prior years.....	463 30
Contingent, Bureau of Equipment and Recruiting, 1884 and prior years.....	88 11
Construction and repair, Bureau of Construction and Repair, 1884 and prior years	366 79
Provisions, Navy, Bureau of Provisions and Clothing, 1884 and prior years.....	180 60
Medical Department, Bureau of Medicine and Surgery, 1884 and prior years	5 00
Indemnity for lost clothing, prior to July 1, 1884	410 83
For payment on account of clothing or bedding destroyed by order for sanitary purposes in preventing the spread of contagious diseases.....	144 55
Bounty for the destruction of enemies' vessels, prior to July 1, 1884	263 91
For the payment of claims for difference between actual expenses and mileage allowed under the decision of the U. S. Supreme Court in the case of <i>Graham vs. United States</i>	12,617 52
Enlistment bounties to seamen, prior to July 1, 1884.....	1,232 13
Total	20,752 42

Reported by the Sixth Auditor, under section 2, act July 7, 1884 (23 Stat., p. 254).

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT.				
CLAIMS.				
8039	B. Kahn, postmaster, Allentown, Ala.....	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1872	\$27 37
8039	do	do	1873	27 83
8040	Mrs. Z. Lassiter, postmaster, Apple Grove, Ala.	do	1873, 1874	15 10
8041	N. D. McNeill, postmaster, Arbor Vitae, Ala.	do	1873, 1874	15 26
8042	John H. Nelson, postmaster, Ashville, Ala.	do	1869, 1870	19 96
8043	A. S. Grigg, postmaster, Auburn, Ala.	do	1873, 1874	379 22
8044	W. H. Robinett, postmaster, Balm, Ala.	do	1873, 1874	2 42
8045	C. E. Johnson, postmaster, Bell Factory, Ala.	do	1871, 1872	62 24
8045	do	do	1873, 1874	69 90
8046	A. B. Lacy, postmaster, Berkley, Ala.	do	1871, 1872	10 22
8046	do	do	1873, 1874	14 78
8047	W. A. Turner, postmaster, Bladen Springs, Ala.	do	1873, 1874	107 32
8048	Edward McGaughy, postmaster, Bridgeport, Ala.	do	1872	44 78
8049	B. J. Hughes, postmaster, Bridgeville, Ala.	do	1869, 1870	116 22
8049	do	do	1871	26 82
8050	Joseph J. Gardner, postmaster, Bridgeville, Ala.	do	1871, 1872	34 56
8050	do	do	1873	49 36
8051	N. B. Leeth, postmaster, Broomtown, Ala.	do	1871, 1872	1 90
8052	M. L. Stansel, postmaster, Carrollton, Ala.	do	1873	54 11
8053	J. T. Wood, postmaster, Cedar Plains, Ala.	do	1871, 1872	8 48
8053	do	do	1873, 1874	6 04
8054	Wade Pippin, postmaster, Centreville, Ala.	do	1871	32 39
8055	S. G. Burke, postmaster, Chambers C. H., Ala.	do	1873, 1874	196 18
8056	Roswell Poole, postmaster, Choctaw Corner, Ala.	do	1871, 1872	17 38
8057	Charles T. Williamson, postmaster, Chulafinne, Ala.	do	1871, 1872	15 10
8057	do	do	1873	46 38
8058	James T. Rash, postmaster, Chulafinne, Ala.	do	1873, 1874	48 74
8059	James P. Stelle, postmaster, Citronelle, Ala.	do	1871, 1872	19 88
8060	J. W. Cotter, postmaster, Claiborne, Ala.	do	1871, 1872	205 65
8061	Laura A. Gregory, postmaster, Clayton, Ala.	do	1873	35 19
8062	Andrew J. Laird, postmaster, Clayton, Ala.	do	1873, 1874	64 64

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8063	F. P. Strother, postmaster, Clinton, Ala....	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1871, 1872	\$49 30
8064	Alfred D. Simmons, postmaster, Courtland, Ala.	do	1871, 1872	260 10
8064	do	do	1873, 1874	85 05
8065	Robert P. Baldwin, postmaster, Crawford, Ala.	do	1873, 1874	32 26
8066	W. D. McCarty, postmaster, Daleville, Ala.	do	1871, 1872	23 16
8066	do	do	1873	6 30
8067	R. B. Day, postmaster, Danville, Ala.	do	1871, 1872	75 92
8068	W. R. Phillips, postmaster, Dickson, Ala.	do	1869, 1870	24 62
8069	W. G. Thrasher, postmaster, Dry Creek, Ala.	do	1871, 1872	13 56
8070	A. J. Tidwell, postmaster, Dublin, Ala.	do	1871, 1872	10 64
8071	Mary E. Taunton, postmaster, Elba, Ala.	do	1871, 1872	91 21
8072	J. P. Lyle, postmaster, Eldridge, Ala.	do	1871, 1872	11 10
8072	do	do	1873, 1874	15 08
8073	J. E. Westcott, postmaster, Gaston, Ala.	do	1874	25 94
8074	M. O. Brien, postmaster, Georgiana, Ala.	do	1869, 1870	98 36
8075	George W. Powell, postmaster, Goldville, Ala.	do	1872	4 28
8075	do	do	1873, 1874	81
8076	E. G. Chandler, postmaster, Gravelly Spring, Ala.	do	1871, 1872	28 84
8076	do	do	1873, 1874	15 50
8077	William Miller, jr., postmaster, Greenville, Ala.	do	1871, 1872	219 18
8078	John T. Newcomer, postmaster, Greenville, Ala.	do	1872	64 35
8078	do	do	1873, 1874	360 60
8079	Calvin McBrown, postmaster, Gurleysville, Ala.	do	1871, 1872	54 84
8080	William Campbell, postmaster, Havana, Ala.	do	1871, 1872	212 42
8080	do	do	1873	95 17
8081	L. G. Wilson, postmaster, Havana, Ala.	do	1873, 1874	86 61
8082	Mrs. Martha McAdams, postmaster, Hayes' Store, Ala.	do	1871, 1872	6 62
8083	Jesse O. Sharman, postmaster, Hickory Flat, Ala.	do	1871, 1872	31 38
8084	R. R. Kirby, postmaster, Hillian's Store, Ala.	do	1872	8 36
8084	do	do	1873	22 00
8085	Samuel R. May, postmaster, Howel's Cross Roads, Ala.	do	1871, 1872	16 12
8086	E. A. Jones, postmaster, Jonesborough, Ala.	do	1871, 1872	45 92
8087	Heun C. Hine, postmaster, Kennedale, Ala.	do	1874	33
8088	D. C. Savage, postmaster, Ladiga, Ala.	do	1874	7 04
8089	J. W. Sandlin, postmaster, Landersville, Ala.	do	1874	1 00
8090	George Lillie, postmaster, Lawrenceville, Ala.	do	1872	25 67
8091	William C. Bostick, postmaster, Louisville, Ala.	do	1872	16 54
8092	S. M. Finch, postmaster, Lower Peach Tree, Ala.	do	1871, 1872	80 71
8093	Cecil D. Whitman, postmaster, Loundesborough, Ala.	do	1872	7 33
8094	R. T. Gaines, postmaster, Milltown, Ala.	do	1872	30
8095	Joseph Paupe, postmaster, Monroeville, Ala.	do	1873, 1874	128 62
8096	Thomas M. Peters, postmaster, Moulton, Ala.	do	1869	23 99
8097	Joseph Riley, postmaster, Mount Hilliard, Ala.	do	1871, 1872	14 68
8097	do	do	1873, 1874	5 18

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8098	Samuel H. Radford, postmaster, Mount Hope, Ala.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1871, 1872	\$19 64
8099	Sarah Ezell, postmaster, Mount Vernon, Ala.	do	1871, 1872	60 20
8100	N. S. Frolickstein, postmaster, Newbern, Ala.	do	1871, 1872	31 54
8100	do	do	1873	71 32
8101	James H. Rice, postmaster, New Hope, Ala.	do	1871, 1872	46 02
8101	do	do	1873	1 26
8102	James B. Dickey, postmaster, New Hope, Ala.	do	1873, 1874	17 74
8103	E. W. Griffith, postmaster, Newton, Ala.	do	1870	9 78
8103	do	do	1871, 1872	21 88
8104	Samuel T. Palmer, postmaster, North Port, Ala.	do	1873, 1874	101 92
8105	Q. P. Siler, postmaster, Orion, Ala.	do	1871, 1872	29 46
8105	do	do	1873, 1874	23 46
8106	James H. Garner, postmaster, Ozark, Ala.	do	1871, 1872	36 89
8107	John B. Pardue, postmaster, Perryville, Ala.	do	1871, 1872	17 31
8108	A. M. Nash, postmaster, Pickensville, Ala.	do	1873	74 31
8109	F. M. Eubanks, postmaster, Pine Level, Ala.	do	1869	10 70
8110	N. D. Wright, postmaster, Pine Level, Ala.	do	1869, 1870	32 10
8110	do	do	1871, 1872	22 50
8110	do	do	1873	23
8111	W. J. Hay, postmaster, Pine Tucky, Ala.	do	1871, 1872	8 02
8112	W. R. Bissell, postmaster, Portland, Ala.	do	1871, 1872	15 19
8112	do	do	1873, 1874	110 90
8113	J. B. Mortimore, postmaster, Pushmataha, Ala.	do	1873, 1874	81 13
8114	Michael Finney, postmaster, Russellville, Ala.	do	1871	30 17
8115	Alonzo Ford, postmaster, Seal's Station, Ala.	do	1871, 1872	126 06
8116	T. G. Tarrant, postmaster, Springville, Ala.	do	1871, 1872	33 10
8116	do	do	1873, 1874	58 35
8117	James E. Bain, postmaster, Somerville, Ala.	do	1867, 1868	15 46
8118	J. J. Murphree, postmaster, Summit, Ala.	do	1873, 1874	35 48
8119	J. H. Gunn, postmaster, Trinity Station, Ala.	do	1873	49 73
8120	Charles Womble, postmaster, Tuscumbia, Ala.	do	1871, 1872	247 78
8120	do	do	1873, 1874	166 84
8121	J. K. McDonald, postmaster, Union Springs, Ala.	do	1871, 1872	293 96
8122	J. H. Houston, postmaster, Uniontown, Ala.	do	1873	173 75
8123	Jonathan Collins, postmaster, Valhermoso Springs, Ala.	do	1869, 1870	7 49
8124	H. D. Chunn, postmaster, Valhermoso Springs, Ala.	do	1871, 1872	23 63
8125	W. H. Higginbotham, postmaster, Village Springs, Ala.	do	1871, 1872	4 85
8125	do	do	1873, 1874	6 46
8126	M. F. Cornelius, postmaster, Walnut Grove, Ala.	do	1871, 1872	19 01
8127	L. W. Dean, postmaster, Walnut Grove, Ala.	do	1872	2 72
8127	do	do	1873, 1874	36 72
8128	Thomas T. McCorkle, postmaster, Waterloo, Ala.	do	1871, 1872	26 48
8128	do	do	1873, 1874	9 34
8129	W. C. Bulger, sr., postmaster, Wetumpka, Ala.	do	1871, 1872	408 78
8129	do	do	1873, 1874	192 96

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8130	Julius H. Adams, postmaster, Adamsville, Ark.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1871, 1872	\$20 00
8131	Charles M. Evans, postmaster, Ash Flat, Ark.	do	1871, 1872	38 74
8132	S. A. Duke, postmaster, Bartholomew, Ark.	do	1871, 1872	41 98
8133	Nancy H. Newland, postmaster, Batesville, Ark.	do	1869, 1870	190 82
8133	do	do	1871	65 10
8134	B. F. Davis, postmaster, Bentonville, Ark.	do	1871, 1872	152 70
8135	J. F. Chesney, postmaster, Bernard, Ark.	do	1871, 1872	25 13
8136	B. F. Hobbs, postmaster, Berryville, Ark.	do	1873, 1874	47 74
8137	H. C. Sadler, postmaster, Boonville, Ark.	do	1873, 1874	73 01
8138	C. C. Hall, postmaster, Calhoun, Ark.	do	1872	5 74
8139	T. P. McGlora, postmaster, Cane Creek, Ark.	do	1871, 1872	11 24
8139	do	do	1873, 1874	13 38
8140	Mrs. Mary E. Hales, née Marsh, postmaster, Caney, Ark.	do	1873, 1874	28 91
8141	William Marsh, postmaster, Caney, Ark.	do	1874	4 13
8142	E. A. Acruman, postmaster, Chambersville, Ark.	do	1871, 1872	17 60
8142	do	do	1873, 1874	14 10
8143	W. J. Watts, postmaster, Chocoville, Ark.	do	1873	16 90
8144	H. S. Martin, postmaster, Cincinnati, Ark.	do	1871, 1872	80 00
8145	H. Shields, postmaster, Cincinnati, Ark.	do	1872	29 04
8145	do	do	1873, 1874	60 08
8146	Benjamin Vaughan, postmaster, Clifty, Ark.	do	1873, 1874	4 38
8147	R. H. Gamble, postmaster, Crockett's Bluff, Ark.	do	1869, 1870	61 17
8147	do	do	1871, 1872	87 64
8148	M. Jessup, postmaster, Dardanelle, Ark.	do	1873, 1874	232 92
8149	H. Kirchoff, postmaster, Dover, Ark.	do	1871, 1872	113 04
8149	do	do	1873, 1874	46 66
8150	A. P. Pool, postmaster, El Paso, Ark.	do	1873, 1874	16 32
8151	W. H. Engles, postmaster, Farmington, Ark.	do	1873, 1874	34 58
8152	V. E. Williams, postmaster, Hamburgh, Ark.	do	1871, 1872	109 28
8153	S. C. Law, postmaster, Hot Springs, Ark.	do	1874	173 05
8154	John S. Polk, postmaster, Huntsville, Ark.	do	1869, 1870	188 82
8155	J. D. Lownsbery, postmaster, La Grange, Ark.	do	1871, 1872	37 98
8156	R. T. Markham, postmaster, Lewisburgh, Ark.	do	1871, 1872	100 06
8157	L. Torrence, postmaster, Lyman, Ark.	do	1871	18 92
8158	Eli D. Hooper, postmaster, Magazine, Ark.	do	1873, 1874	52 16
8159	J. P. Roberts, postmaster, Magnolia, Ark.	do	1871, 1872	62 52
8159	do	do	1873, 1874	139 54
8160	C. A. P. Horn, postmaster, Marshall, Ark.	do	1872	22 89
8161	Ed. Schirmer, postmaster, Mineral Springs, Ark.	do	1872	55 65
8161	do	do	1873, 1874	68 62
8162	B. A. White, postmaster, Moro, Ark.	do	1873, 1874	16 08
8163	N. B. Price, postmaster, Mount Adams, Ark.	do	1869, 1870	55 82
8163	do	do	1871, 1872	85 16
8163	do	do	1873, 1874	65 80
8164	J. N. Craig, postmaster, Mount Olive, Ark.	do	1872	11 28
8164	do	do	1873	5 52
8165	J. J. Phillips, postmaster, New Boggy Depot, Ark.	do	1873, 1874	198 43
8166	J. C. McGuire, postmaster, Oil Trough, Ark.	do	1871, 1872	67 80
8167	J. O. Blackwood, postmaster, Osceola, Ark.	do	1872	24 20

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8168	W. R. Kreps, postmaster, Pitman, Ark....	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1873, 1874	\$35 28
8169	T. J. Barnes, postmaster, Plum Bayou, Ark.	do	1871, 1872	110 22
8169	do	do	1873, 1874	36 30
8170	Mrs. C. B. Woodworth, postmaster, Princeton, Ark.	do	1871, 1872	127 66
8170	do	do	1873	34 96
8171	A. J. Ripley, postmaster, Riggsville, Ark.	do	1871, 1872	18 90
8172	W. H. Rodgers, postmaster, Searcy, Ark.	do	1873, 1874	233 50
8173	C. M. Taylor, postmaster, South Bend, Ark.	do	1873, 1874	68 58
8174	Thomas D. Hawkins, postmaster, Springfield, Ark.	do	1869, 1870	27 42
8174	do	do	1871, 1872	43 34
8175	O. M. Spellman, postmaster, Swan Lake, Ark.	do	1871, 1872	52 88
8175	do	do	1873, 1874	64 82
8176	N. Williams, postmaster, Trenton, Ark.	do	1873, 1874	18 32
8177	S. D. Dougherty, postmaster, Van Buren, Ark.	do	1871, 1872	394 42
8178	A. C. Hodge, postmaster, Woodlawn, Ark.	do	1872	1 33
8178	do	do	1873, 1874	11 02
8179	Paul Breon, postmaster, Mohave City, Ariz.	do	1873	16 38
8180	H. B. Fairfield, postmaster, Alviso, Cal.	do	1869	9 58
8181	Aaron Weil, postmaster, Amador City, Cal.	do	1871, 1872	57 86
8182	I. T. Carney, postmaster, Anderson, Cal.	do	1872, 1873	4 26
8183	A. J. Crooks, postmaster, Angel's Camp, Cal.	do	1867, 1868	52 24
8183	do	do	1871, 1872	67 12
8183	do	do	1873, 1874	9 30
8184	Charles Smith, postmaster, Areata, Cal.	do	1873, 1874	99 20
8185	John Corbet, postmaster, Arroyo Grande, Cal.	do	1873, 1874	8 74
8186	George B. Chester, postmaster, Bakersfield, Cal.	do	1873, 1874	45 48
8187	E. Watermire, postmaster, Belmont, Cal.	do	1869, 1870	18 28
8187	do	do	1871, 1872	40 52
8188	William Ulrich, postmaster, Big Oak Flat, Cal.	do	1869, 1870	49 30
8188	do	do	1873, 1874	16 16
8189	A. F. Bryant, postmaster, Bridgeport, Cal.	do	1871, 1872	25 88
8190	James L. Hall, postmaster, Brown's Valley, Cal.	do	1873	35 02
8191	Martin Knox, postmaster, Brownsville, Cal.	do	1871, 1872	13 94
8192	A. J. Gove, postmaster, Bullard's Bar, Cal.	do	1869, 1870	24 70
8193	Ishmael Monroe, postmaster, Burwood, Cal.	do	1869, 1870	11 72
8193	do	do	1871, 1872	9 06
8193	do	do	1873, 1874	10 16
8194	A. Hoffman, postmaster, Cache Creek, Cal.	do	1871, 1872	27 60
8195	S. Wurttemberg, postmaster, Calpella, Cal.	do	1867, 1868	29 16
8195	do	do	1869	82
8196	N. Zimmerman, postmaster, Camanche, Cal.	do	1871, 1872	23 10
8197	L. A. Hildreth, postmaster, Chico, Cal.	do	1873, 1874	294 18
8198	G. S. Tong, postmaster, Clarksville, Cal.	do	1869, 1870	19 34
8198	do	do	1873, 1874	42 90
8199	Charles Rhine, postmaster, Clayton, Cal.	do	1871, 1872	72 48
8199	do	do	1873, 1874	18 30
8200	E. H. Pratt, postmaster, Clipper Mills, Cal.	do	1869, 1870	15 32
8201	Charles Cook, postmaster, Cloverdale, Cal.	do	1869, 1870	14 81
8202	P. B. Bacon, postmaster, Columbia, Cal.	do	1871, 1872	88 51
8203	James V. Sims, postmaster, Courtland, Cal.	do	1873, 1874	8 21
8204	M. C. Cohern, postmaster, Danville, Cal.	do	1871, 1872	32 80
8205	W. S. Day, postmaster, Diamond Springs, Cal.	do	1867, 1868	69 32

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8206	H. J. McKinsey, postmaster, Downieville, Cal.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1871, 1872	\$209 28
8207	Thomas Beacon, postmaster, Duncan's Mills, Cal.	do	1869, 1870	30 98
8208	Elias Willow, postmaster, El Dorado, Cal.	do	1871, 1872	86 16
8208	do	do	1873, 1874	44 10
8209	James A. Diggles, postmaster, Etna Mills, Cal.	do	1871, 1872	28 30
8210	Charles H. Henly, postmaster, Eureka, Cal.	do	1869, 1870	92 30
8211	Edward Bennison, postmaster, Eureka, Cal.	do	1870, 1871	17 86
8212	E. J. Dodge, postmaster, Ferndale, Cal.	do	1871, 1872	144 80
8212	do	do	1873, 1874	20 12
8213	R. B. Wight, postmaster, Fiddletown, Cal.	do	1869, 1870	36 80
8214	Mark Ayer, postmaster, Folsom City, Cal.	do	1869, 1870	98 98
8215	J. H. Smith, postmaster, Folsom City, Cal.	do	1869, 1870	223 65
8216	A. H. Cowdin, postmaster, Forest Hill, Cal.	do	1871, 1872	79 36
8217	Alexander Owens, postmaster, Fort Jones, Cal.	do	1873, 1874	66 56
8218	William M. Eddy, postmaster, French Corral, Cal.	do	1871, 1872	79 68
8218	do	do	1869, 1870	63 70
8219	R. Filippin, postmaster, Garden Valley, Cal.	do	1871, 1872	26 28
8220	B. F. Shepherd, postmaster, Georgetown, Cal.	do	1872, 1873	66
8221	O. F. Ackerly, postmaster, Goodyear's Bar, Cal.	do	1872, 1873	13 68
8222	James Tannahill, postmaster, Groveland, Cal.	do	1871, 1872	9 86
8222	do	do	1871, 1872	17 34
8223	H. Doolittle, postmaster, Happy Camp, Cal.	do	1873, 1874	15 76
8224	G. W. Peacock, postmaster, Harrisburgh, Cal.	do	1869, 1870	19 29
8225	William Hayward, postmaster, Hayward's, Cal.	do	1871, 1872	14 54
8225	do	do	1871, 1872	116 40
8226	Edward Donaghy, postmaster, Henley, Cal.	do	1873, 1874	68 00
8226	do	do	1870, 1871	15 68
8226	do	do	1871, 1872	16 10
8226	do	do	1873	4 71
8227	William Goodall, postmaster, Horsetown, Cal.	do	1869, 1870	83 66
8227	do	do	1871, 1872	86 06
8228	Samuel Dewey, postmaster, Inskip, Cal.	do	1871, 1872	11 54
8228	do	do	1873	8 44
8229	William H. Scudder, postmaster, Ione Valley, Cal.	do	1869, 1870	43 54
8230	L. N. Breed, postmaster, Jonesville, Cal.	do	1869, 1870	2 80
8231	William C. Caldwell, postmaster, King's River, Cal.	do	1871, 1874	34 62
8232	S. S. Hill, postmaster, Knight's Ferry, Cal.	do	1871, 1872	89 50
8233	William P. Greenfell, postmaster, La Grange, Cal.	do	1871, 1872	8 08
8234	George Martin, postmaster, Lakeport, Cal.	do	1871, 1872	28 07
8235	A. J. Adams, postmaster, Latrobe, Cal.	do	1873, 1874	36 34
8236	I. E. Paddock, postmaster, Lexington, Cal.	do	1867, 1868	10 94
8236	do	do	1873, 1874	9 98
8237	W. E. Fifield, postmaster, Linden, Cal.	do	1870, 1871	20 10
8237	do	do	1871, 1872	157 10
8237	do	do	1873, 1874	81 12
8238	Hiram Willits, postmaster, Little Lake, Cal.	do	1869, 1870	10 36
8238	do	do	1871, 1872	53 86
8239	Isaiah Stevens, postmaster, Little River, Cal.	do	1873, 1874	19 14
8240	P. R. Welsh, postmaster, Longville, Cal.	do	1872, 1873	3 10

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8241	C. H. Merithew, postmaster, Maine Prairie, Cal.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1884 and prior years.	1873, 1874	\$19 14
8242	William Nelson, postmaster, Merad Falls, Cal.	do	1873, 1874	26 96
8243	J. F. Fouts, postmaster, Meridian, Cal.	do	1867, 1868	18 46
8243	do	do	1869, 1870	13 64
8244	Otto Froelich, postmaster, Millerton, Cal.	do	1870, 1871	47 28
8244	do	do	1871, 1872	45 08
8245	J. P. Chamberlin, postmaster, Mission San José, Cal.	do	1769, 1870	95 32
8245	do	do	1871, 1872	118 86
8246	S. Caldwell, postmaster, Moore's Flat, Cal.	do	1869, 1870	31 02
8246	do	do	1871, 1872	71 74
8246	do	do	1873, 1874	25 08
8247	Charles Wintzer, postmaster, Navarro Ridge, Cal.	do	1873, 1874	16 42
8248	Paul N. Harris, postmaster, Nicolaus, Cal.	do	1871, 1872	38 66
8249	A. O. Wallace, postmaster, North San Diego, Cal.	do	1871, 1872	21 80
8250	R. B. Sydnor, postmaster, Oakdale, Cal.	do	1871, 1872	40 88
8251	F. Darneille, postmaster, Oregon House, Cal.	do	1871, 1872	11 81
8252	W. F. S. Naylor, postmaster, Oro Fino, Cal.	do	1867, 1868	32 40
8253	H. M. Hale, postmaster, Pacheco, Cal.	do	1869	28 32
8254	M. Barthel, postmaster, Pacheco, Cal.	do	1869, 1870	43 24
8255	N. Crocker, postmaster, Paso Robles, Cal.	do	1872, 1873	8 53
8256	Charles Bishop, postmaster, Pleasant Grove Creek, Cal.	do	1871, 1872	4 54
8257	A. P. Harris, postmaster, Plum Valley, Cal.	do	1869, 1870	23 90
8257	do	do	1871	87
8258	Corydon Lee, postmaster, Quincy, Cal.	do	1873, 1874	129 88
8259	John McBride, postmaster, Rattle Snake Bar, Cal.	do	1867, 1868	9 54
8259	do	do	1869	4 88
8260	J. R. Bradway, postmaster, Red Bluff, Cal.	do	1867, 1868	212 38
8260	do	do	1869, 1870	140 37
8261	W. H. Bahney, postmaster, Red Bluff, Cal.	do	1871, 1872	135 66
8262	James Gilmon, postmaster, Rockville, Cal.	do	1869, 1870	60 18
8263	C. P. Coates, postmaster, Rohnerville, Cal.	do	1871, 1872	18 60
8264	Silas Felker, postmaster, Santa Cruz, Cal.	do	1869, 1870	127 44
8265	A. E. Maclay, postmaster, Saratoga, Cal.	do	1873	70 54
8266	S. Simon, postmaster, Scott River, Cal.	do	1873, 1874	21 50
8267	A. Bullerdick, postmaster, Shaw's Flat, Cal.	do	1870, 1871	42 40
8268	William Arms, postmaster, Sierra Valley, Cal.	do	1871, 1872	41 44
8269	T. H. McFadden, postmaster, Smartville, Cal.	do	1873, 1874	9 02
8270	James Brooking, postmaster, Smith River, Cal.	do	1870, 1871	3 94
8270	do	do	1871, 1872	27 24
8271	T. J. Northup, postmaster, Sugar Pine, Cal.	do	1873, 1874	12 92
8272	William Menner, postmaster, Sweetland, Cal.	do	1867, 1868	16 00
8272	do	do	1869	1 89
8273	Benjamin Wood, postmaster, Sweetland, Cal.	do	1871, 1872	12 13
8274	W. S. Price, postmaster, Taylorville, Cal.	do	1873, 1864	63 93
8275	G. W. Hodgkins, postmaster, Taylorville, Cal.	do	1874	17 23
8276	W. Dutton, postmaster, Tomales, Cal.	do	1871, 1872	71 30
8277	T. J. Compton, postmaster, West Butte, Cal.	do	1871, 1872	15 86
8277	do	do	1873	2 99
8278	J. M. Cope, postmaster, West Butte, Cal.	do	1873, 1874	2 00

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8279	J. H. Gratacap, postmaster, West Point, Cal.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1867, 1868	\$155 34
8280	H. Lohse, postmaster, Wheatland, Cal.	do	1871, 1872	8 26
8281	J. J. Lindsay, postmaster, Windsor, Cal.	do	1871, 1872	32 12
8282	B. de la Beckwith, postmaster, Woodbridge, Cal.	do	1871, 1872	216 29
8283	A. C. Rutledge, postmaster, Woodbridge, Cal.	do	1872, 1873	30 89
8284	M. H. Wells, postmaster, Yankee Hill, Cal.	do	1869, 1870	46 84
8285	G. A. Michaels, postmaster, Yankee Jim's, Cal.	do	1869, 1870	94 70
8285	do	do	1871, 1872	27 34
8286	A. Griffith, postmaster, Yolo, Cal.	do	1869, 1870	36 33
8287	C. V. Burke, postmaster, Yolo, Cal.	do	1872, 1873	87 71
8288	C. Lambert, postmaster, Yountsville, Cal.	do	1873, 1874	59 86
8289	J. C. Owen, postmaster, Zem Zem, Cal.	do	1873, 1874	8 00
8300	Charles O. Unfug, postmaster, Badito, Colo.	do	1870	1 48
8301	A. G. Boone, postmaster, Booneville, Colo.	do	1867, 1868	168 06
8302	J. C. Woodbury, postmaster, E. Paso, Colo.	do	1873	12 52
8303	J. W. Dripps, postmaster, Empire City, Colo.	do	1869, 1870	170 16
8304	W. J. Kram, postmaster, Evans, Colo.	do	1871, 1872	43 53
8305	R. Schmeiding, postmaster, Fort Garland, Colo.	do	1871, 1872	243 92
8306	A. H. Terrill, postmaster, Fountain, Colo.	do	1869, 1870	19 64
8306	do	do	1871, 1872	20 92
8307	E. H. Gould, postmaster, Fountain, Colo.	do	1872	6 08
8308	Charles Mater, postmaster, Granite, Colo.	do	1871, 1872	118 60
8309	R. E. Sloan, postmaster, Larkspur, Colo.	do	1873, 1874	45 66
8310	Charles H. Blair, postmaster, Lincoln City, Colo.	do	1871, 1872	19 46
8310	do	do	1873	12 24
8311	A. Rist, postmaster, Namagua, Colo.	do	1873, 1874	30
8312	J. W. Ratliff, postmaster, Nevada, Colo.	do	1873, 1874	120 96
8313	G. P. Wood, postmaster, Sugar Loaf, Colo.	do	1873, 1874	7 06
8314	Charles E. Bristol, postmaster, Ansonia, Conn.	do	1870	122 29
8315	B. C. Kellogg, postmaster, Avon, Conn.	do	1867, 1868	45 30
8316	Edward Crossman, postmaster, Bantam Falls, Conn.	do	1867, 1868	42 78
8316	do	do	1871, 1872	32 94
8317	H. N. Galpin, postmaster, Berlin, Conn.	do	1867, 1868	179 10
8318	H. W. Rowley, postmaster, Bloomfield, Conn.	do	1869, 1870	28 86
8319	Henry Alvord, postmaster, Bolton, Conn.	do	1867, 1868	30 82
8320	S. P. Sumner, postmaster, Bolton, Conn.	do	1871, 1872	36 63
8320	do	do	1873, 1874	32 68
8321	M. Chandler, postmaster, Burnside, Conn.	do	1867, 1868	28 44
8322	George H. Breinton, postmaster, Canaan Valley, Conn.	do	1873, 1874	28 94
8323	R. L. Hawley, postmaster, Canton, Conn.	do	1867, 1868	35 96
8323	do	do	1869	12 90
8324	J. W. Lincoln, postmaster, Chaplin, Conn.	do	1871, 1872	57 88
8325	Joseph A. Foote, postmaster, Colchester, Conn.	do	1868	51 63
8326	S. O. Botsford, postmaster, Cold Spring, Conn.	do	1867, 1868	27 32
8327	Henry L. Allen, postmaster, Colebrook, Conn.	do	1869, 1870	34 93
8328	D. T. Fuller, postmaster, Columbia, Conn.	do	1867, 1868	22 99
8329	Jno. W. Beers, postmaster, Cornwall, Conn.	do	1867	26 19
8329	do	do	1870	18 97
8330	S. P. Judson, postmaster, Cornwall, Conn.	do	1867, 1868	43 64
8330	do	do	1869	18 97
8331	Jno. Isham, postmaster, Coventry Depot, Conn.	do	1868	2 28
8332	T. G. Hodgson, postmaster, Coventry Depot, Conn.	do	1869, 1870	15 94

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8332	T. G. Hodgson, postmaster, Coventry Depot, Conn.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1871	\$11 68
8333	E. W. Phillips, postmaster, Coventry Depot, Conn.	do	1872	16 26
8334	J. S. Waterbury, postmaster, Darien, Conn.	do	1869, 1870	79 72
8334	do	do	1871, 1872	60 18
8335	S. P. Shipman, postmaster, Deep River, Conn.	do	1871, 1872	455 34
8336	S. B. Cooper, postmaster, Durham, Conn.	do	1869	42 24
8337	Mary J. Meigs, postmaster, Durham Centre, Conn.	do	1867, 1868	59 66
8337	do	do	1869, 1870	41 12
8337	do	do	1870, 1871	72
8338	George H. Davis, postmaster, Durham Centre, Conn.	do	1871, 1872	43 36
8339	E. B. Hibbard, postmaster, Eagleville, Conn.	do	1867, 1868	12 02
8340	W. W. Dowd, postmaster, East Berlin, Conn.	do	1871, 1872	82 58
8340	do	do	1873, 1874	205 06
8341	O. M. Burnham, postmaster, Eastford, Conn.	do	1867	14 56
8342	C. Hamlin, postmaster, East Granby, Conn.	do	1873	6 14
8343	D. M. Church, postmaster, East Haven, Conn.	do	1867, 1868	20 85
8343	do	do	1869, 1870	14 51
8344	S. Hemingway, postmaster, East Haven, Conn.	do	1870	10 31
8344	do	do	1871, 1872	66 36
8345	Isaac Fogg, postmaster, East Killingly, Conn.	do	1869, 1870	21 06
8345	do	do	1871, 1872	73 24
8346	Ezra Parker, postmaster, East Putnam, Conn.	do	1869, 1870	32 50
8346	do	do	1871, 1872	28 12
8346	do	do	1873, 1874	139 56
8347	I. L. Scranton, jr., postmaster, East River, Conn.	do	1871, 1872	68 98
8347	do	do	1873, 1874	286 66
8348	S. J. Bartlett, postmaster, East Windsor, Conn.	do	1867, 1868	13 63
8349	C. J. Parmelee, postmaster, East Windsor Hill, Conn.	do	1867, 1868	73 22
8350	C. F. Peck, postmaster, Ellsworth, Conn.	do	1869, 1870	3 83
8351	A. Johnson, postmaster, Enfield, Conn.	do	1867	20 73
8352	C. B. Wakeley, postmaster, Fairfield, Conn.	do	1871, 1872	108 46
8353	J. D. Howell, postmaster, Fair Haven, Conn.	do	1867, 1868	1,235 26
8354	R. H. Cowles, postmaster, Farmington, Conn.	do	1872	23 91
8355	A. B. Smith, postmaster, Franklin, Conn.	do	1867, 1868	23 26
8355	do	do	1869, 1870	29 20
8355	do	do	1871, 1872	24 00
8355	do	do	1873, 1874	17 38
8356	Isaac Bragaw, postmaster, Gale's Ferry, Conn.	do	1873, 1874	9 86
8357	R. T. Hutchinson, postmaster, Gilead, Conn.	do	1867, 1868	30 84
8358	E. H. Andrews, postmaster, Glastonbury, Conn.	do	1869, 1870	76 08
8359	John W. Brooks, postmaster, Goshen, Conn.	do	1867	5 86
8359	do	do	1869, 1870	62 12
8360	J. E. Brush, postmaster, Greenwich, Conn.	do	1867	21 56
8361	John Dayton, postmaster, Greenwich, Conn.	do	1867, 1868	69 85
8362	Mrs. T. S. Tillinghast, postmaster, Griswold, Conn.	do	1869	6 51
8363	T. W. Turner, postmaster, Groton, Conn.	do	1867	5 93

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8364	E. S. Clark, postmaster, Haddam, Conn.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1867, 1868	\$98 74
8365	S. H. Lord, postmaster, Hamburgh, Conn.	do	1867	17 04
8366	H. B. Sesson, postmaster, Hamburgh, Conn.	do	1867, 1868	64 06
8366	do	do	1869	32 35
8367	M. S. Parker, postmaster, Hamburgh, Conn.	do	1869, 1870	42 87
8367	do	do	1871	15 23
8368	L. Maria Smith, postmaster, Hanover, Conn.	do	1871, 1872	58 68
8368	do	do	1873, 1874	29 30
8369	P. B. Coe, postmaster, Hartland, Conn.	do	1867	12 18
8370	C. G. Tiffany, postmaster, Hazardville, Conn.	do	1869	46 89
8371	C. G. Buell, postmaster, Hebron, Conn.	do	1867, 1868	82 78
8371	do	do	1869, 1870	54 86
8372	J. H. Newman, postmaster, High Ridge, Conn.	do	1867, 1868	46 38
8372	do	do	1871, 1872	32 34
8373	D. Fox, postmaster, Hockanum, Conn.	do	1867, 1868	119 22
8374	R. J. Allen, postmaster, Hotchkissville, Conn.	do	1867, 1868	41 98
8374	do	do	1867-1870	31 54
8375	James H. Chase, postmaster, Huntsville, Conn.	do	1871, 1872	20 64
8376	Burnett Eaton, postmaster, Kent, Conn.	do	1873, 1874	76 20
8377	Marcus Wood, postmaster, Killingly, Conn.	do	1869, 1870	61 84
8377	do	do	1871, 1872	234 70
8378	T. L. Norton, postmaster, Lakeville, Conn.	do	1867, 1868	156 26
8379	George D. Spencer, postmaster, Lebanon, Conn.	do	1867, 1868	56 56
8380	James McCracken, postmaster, Ledyard, Conn.	do	1867, 1868	5 14
8381	Miles Beardsley, postmaster, Long Hill, Conn.	do	1869	27 49
8382	E. P. Hatch, postmaster, Manchester, Conn.	do	1869, 1870	122 30
8382	do	do	1871	15 36
8383	Aaron Cook, postmaster, Manchester, Conn.	do	1871	46 08
8384	A. K. Brown, postmaster, Mansfield Depot, Conn.	do	1869, 1870	30 98
8385	C. B. Morehouse, postmaster, Marble Dale, Conn.	do	1867, 1868	55 52
8385	do	do	1869, 1870	47 95
8386	Isaac Allen, postmaster, Marlborough, Conn.	do	1867, 1868	41 86
8387	M. H. Kinney, postmaster, Mashapang, Conn.	do	1869, 1870	8 36
8387	do	do	1871, 1872	30 12
8387	do	do	1873, 1874	27 30
8388	F. G. Scott, postmaster, Middlebury, Conn.	do	1873, 1874	38 70
8389	W. J. Beach, postmaster, Milton, Conn.	do	1869, 1870	12 73
8390	William A. Clark, postmaster, Monroe, Conn.	do	1867, 1868	52 94
8390	do	do	1871, 1872	35 06
8391	L. D. Tompkins, postmaster, Montville, Conn.	do	1872	9 96
8391	do	do	1873, 1874	52 46
8392	A. R. Stevens, postmaster, New Fairfield, Conn.	do	1873	22 58
8393	Mrs. P. A. Hatchman, postmaster, Newington Junction, Conn.	do	1871	82 88
8394	H. C. Caldwell, postmaster, Newington, Conn.	do	1872	50 67
8394	do	do	1873, 1874	128 29
8395	W. B. Allen, postmaster, New Milford, Conn.	do	1867, 1868	133 60

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8396	D. Burnham, postmaster, New Preston, Conn.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1867, 1868	\$119 40
8397	G. P. Thompson, postmaster, Norfolk, Conn.	do	1867	13 16
8398	M. P. Bell, postmaster, Norfolk, Conn.	do	1867, 1868	153 82
8398	do	do	1869	19 36
8399	John Catlin, postmaster, Northfield, Conn.	do	1869, 1870	31 60
8399	do	do	1871, 1872	80 10
8400	E. C. May, postmaster, North Woodstock, Conn.	do	1873, 1874	48 44
8401	N. T. Warner, postmaster, Oakville, Conn.	do	1869, 1870	56 12
8401	do	do	1871, 1872	79 94
8402	S. F. Oviatt, postmaster, Orange, Conn.	do	1867, 1868	15 68
8402	do	do	1871, 1872	18 38
8403	S. P. Sanford, postmaster, Oxford, Conn.	do	1867, 1868	27 69
8404	George A. Adams, postmaster, Phoenixville, Conn.	do	1867, 1868	12 21
8405	L. P. Norton, postmaster, Plantsville, Conn.	do	1867	29 80
8406	S. H. Norton, postmaster, Plantsville, Conn.	do	1867, 1868	203 54
8407	H. S. Ives, postmaster, Plantsville, Conn.	do	1873, 1874	178 36
8408	D. Sanford, postmaster, Redding Ridge, Conn.	do	1867, 1868	27 90
8409	S. S. Danchy, postmaster, Ridgefield, Conn.	do	1867, 1868	105 77
8410	John Partridge, postmaster, Robertsville, Conn.	do	1873, 1874	39 40
8411	O. C. Knapp, postmaster, Round Hill, Conn.	do	1867, 1868	73 64
8411	do	do	1869, 1870	46 86
8411	do	do	1871, 1872	26 50
8411	do	do	1873, 1874	46 90
8412	George Hurlbut, postmaster, Roxbury, Conn.	do	1869, 1870	39 04
8413	E. L. Stevenson, postmaster, Saugatuck, Conn.	do	1869	44 48
8414	J. E. Hubbell, postmaster, Saugatuck, Conn.	do	1869, 1870	62 40
8414	do	do	1873, 1874	55 28
8415	L. S. Johnson, postmaster, Scitico, Conn.	do	1873, 1874	12 84
8416	William W. Hoag, postmaster, Sherman, Conn.	do	1867, 1868	7 94
8417	N. E. Northup, postmaster, Sherman, Conn.	do	1869, 1870	23 80
8417	do	do	1871	4 07
8418	S. E. Keeler, postmaster, Smith's Ridge, Conn.	do	1867	2 13
8419	William L. Brown, postmaster, Smith's Ridge, Conn.	do	1867, 1868	6 40
8419	do	do	1869, 1870	11 46
8419	do	do	1871	4 67
8420	Theodore Arnold, postmaster, Smith's Ridge, Conn.	do	1872	4 67
8420	do	do	1873	2 53
8421	A. Bray, postmaster, South Britain, Conn.	do	1867, 1868	38 08
8422	F. C. Strickland, postmaster, South Glastonbury, Conn.	do	1867	43 23
8423	W. D. Cook, postmaster, Southington, Conn.	do	1869, 1870	180 76
8423	do	do	1873, 1874	327 82
8424	R. L. Chadwick, postmaster, South Lyme, Conn.	do	1867, 1868	18 52
8425	S. M. Fenner, postmaster, South Woodstock, Conn.	do	1869, 1870	17 69
8426	G. H. Pinney, postmaster, Stafford, Conn.	do	1867	18 65
8427	C. Harvey, postmaster, Stafford, Conn.	do	1867, 1868	130 57

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8428	Jonathan Pinch, postmaster, Stanwich, Conn.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1867, 1868	\$13 00
8428	do	do	1869, 1870	9 20
8428	do	do	1871, 1872	23 12
8428	do	do	1873, 1874	15 62
8429	I. Burritt, postmaster, Stepney, Conn.	do	1867, 1868	43 92
8429	do	do	1869	3 88
8430	William Anderson, postmaster, Sterling, Conn.	do	1871	7 13
8431	S. Q. Mattison, postmaster, Sterling, Conn.	do	1872	5 35
8432	James Pike, postmaster, Sterling Hill, Conn.	do	1867, 1868	8 91
8432	do	do	1869, 1870	24 70
8432	do	do	1871, 1872	15 20
8433	F. Williams, postmaster, Stonington, Conn.	do	1867, 1868	202 72
8434	H. C. Aborn, postmaster, Square Pond, Conn.	do	1867, 1868	5 02
8434	do	do	1873	2 15
8435	William Reed, postmaster, Tariffville, Conn.	do	1868, 1869	23 32
8435	do	do	1869	56 95
8436	P. B. Coe, postmaster, Tariffville, Conn.	do	1869, 1870	142 38
8436	do	do	1871, 1872	60 35
8437	B. H. Hermingway, postmaster, Perryville, Conn.	do	1867, 1868	147 98
8437	do	do	1869, 1870	142 14
8437	do	do	1871, 1872	194 42
8438	E. T. Gates, postmaster, Thomaston, Conn.	do	1871, 1872	222 64
8439	P. W. Turner, postmaster, Turnerville, Conn.	do	1871, 1872	14 18
8439	do	do	1873, 1874	21 80
8440	W. R. Burnham, postmaster, Uncasville, Conn.	do	1869	12 48
8441	Charles Hine, postmaster, Warren, Conn.	do	1867, 1868	31 04
8441	do	do	1869, 1870	65 70
8441	do	do	1871, 1872	20 38
8442	A. M. Darrow, postmaster, Waterford, Conn.	do	1867, 1868	29 34
8443	L. G. Abbe, postmaster, Waterville, Conn.	do	1871, 1872	38 30
8444	H. A. Atkins, postmaster, Wauregan, Conn.	do	1871, 1872	80 96
8444	do	do	1873, 1874	93 00
8445	Bela E. Hotchkiss, postmaster, West Cheshire, Conn.	do	1869, 1870	44 63
8446	G. Rogers, postmaster, West Chester, Conn.	do	1869, 1870	28 18
8447	Samuel Brown, postmaster, West Chester, Conn.	do	1870, 1871	21 32
8448	H. C. Crandall, postmaster, West Cornwall, Conn.	do	1867	8 98
8449	J. S. Waterbury, postmaster, West Darien, Conn.	do	1873, 1874	38 24
8450	Charles L. Dean, postmaster, Westford, Conn.	do	1867, 1868	38 50
8451	E. W. Wilmot, postmaster, West Haven, Conn.	do	1869, 1870	84 04
8452	A. L. Imes, postmaster, Westminster, Conn.	do	1872, 1873	12 50
8453	Henry Davis, postmaster, West Norwalk, Conn.	do	1871, 1872	138 68
8453	do	do	1873, 1874	187 30
8454	Elizabeth A. Campbell, postmaster, West Suffield, Conn.	do	1867, 1868	63 70
8455	Ira Johnson, postmaster, West Willington, Conn.	do	1873, 1874	44 36

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8456	J. B. Carpenter, postmaster, West Willington, Conn.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1884 and prior years.	1874	\$6 34
8457	B. F. Marsh, postmaster, West Winstead, Conn.	do	1873, 1874	530 22
8458	M. L. Dimock, postmaster, Willington, Conn.	do	1867, 1868	70 70
8458	do	do	1871, 1872	27 06
8459	F. L. Loomis, postmaster, Winchester, Conn.	do	1867, 1868	60 44
8460	W. F. Arnold, postmaster, Winthrop, Conn.	do	1867, 1868	64 08
8460	do	do	1869	36 70
8461	O. R. Tyler, postmaster, Wolcottville, Conn.	do	1871, 1872	481 06
8462	W. E. Woodruff, postmaster, Woodbury, Conn.	do	1867	68 74
8463	F. A. Walker, postmaster, Woodbury, Conn.	do	1867, 1868	45 82
8464	T. P. Leonard, postmaster, Woodstock, Valley, Conn.	do	1867, 1868	41 24
8464	do	do	1869	12 67
8465	A. M. Bancroft, postmaster, Woodstock Valley, Conn.	do	1869, 1870	21 11
8465	do	do	1873, 1874	27 78
8466	M. S. Beeman, postmaster, Woodville, Conn.	do	1867	13 18
8467	W. H. Hubbard, postmaster, Fairview, Dak.	do	1873, 1874	8 92
8468	E. W. Brenner, postmaster, Fort Totten, Dak.	do	1873, 1874	380 28
8469	E. W. Walters, postmaster, Jefferson, Dak.	do	1873	47 43
8470	Charles Allen, postmaster, Sioux Falls, Dak.	do	1871, 1872	40 12
8471	James H. Maull, postmaster, Angola, Del.	do	1870, 1871	3 88
8472	Miss E. J. Burtonnow, postmaster, Angola, Del.	do	1873, 1874	4 25
8473	William H. Money, postmaster, Blackbird, Del.	do	1873	4 36
8474	M. B. Steele, postmaster, Black Water, Del.	do	1867, 1868	38 44
8475	Julia S. Bradley, postmaster, Canterbury, Del.	do	1868, 1869	50 90
8475	do	do	1873, 1874	22 80
8476	William H. Levy, postmaster, Christiana, Del.	do	1867, 1868	34 06
8477	E. M. Lawson, postmaster, Claymont, Del.	do	1870, 1871	198 36
8478	William L. Siemon, postmaster, Delmar, Del.	do	1867, 1868	50 04
8478	do	do	1869	20 87
8479	J. H. Bateman, postmaster, Dover, Del.	do	1867	246 80
8480	Elijah Register, postmaster, Drawbridge, late Houston, Del.	do	1870	19 56
8480	do	do	1873, 1874	66 46
8481	David Johnson, postmaster, Farmington, Del.	do	1869, 1870	41 54
8482	W. H. Cain, postmaster, Felton Station, Del.	do	1869	20 50
8483	William H. Betts, postmaster, Gumborough, Del.	do	1867, 1868	23 74
8483	do	do	1871, 1872	9 30
8483	do	do	1873, 1874	17 60
8484	John H. Vangesel, postmaster, Harrington, Del.	do	1871, 1872	70 66
8484	do	do	1873	39 47
8485	John C. Thompson, postmaster, Harbeson, Del.	do	1873, 1874	9 44
8486	Peter Carnagy, postmaster, Hare's Corners, Del.	do	1868	6 10
8486	do	do	1869, 1870	17 10
8486	do	do	1871, 1872	42 70

Reported by the Sixth Auditor, &c.—Continued.

No. of certifi- cate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expendi- ture was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8486	Peter Carnagy, postmaster, Hare's Cor- ners, Del.	Compensation of postmas- ters readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1884 and prior years.	1873, 1874	\$80 20
8487	J. H. Johnson, postmaster, Hazlettsville, Del.	do	1867	12 20
8488	James Green, postmaster, Hazlettsville, Del.	do	1868	18 31
8488	do	do	1871, 1872	16 26
8489	J. M. Downes, postmaster, Hazlettsville, Del.	do	1872	2 32
8490	John Wood, postmaster, Henry Clay Fac- tory, Del.	do	1867, 1868	100 86
8490	do	do	1873, 1874	28 56
8491	P. C. Prettyman, postmaster, Hollyville, Del.	do	1867, 1868	2 86
8491	do	do	1869, 1870	5 58
8491	do	do	1871, 1872	9 12
8491½	do	do	1873	5 60
8492	J. N. Wilds, postmaster, Kenton, Del.	do	1873, 1874	3 44
8493	W. C. Jump, postmaster, Kenton, Del.	do	1867	20 66
8494	William H. Moore, postmaster, Kenton, Del.	do	1871, 1872	105 02
8495	James A. Benson, postmaster, Kirkwood, Del.	do	1869	11 44
8496	Z. T. Harris, postmaster, Kirkwood, Del.	do	1870	14 83
8497	J. A. Reeves, postmaster, Leipsic, Del.	do	1867	9 66
8498	H. M. How, postmaster, Leipsic, Del.	do	1868	29 00
8499	H. C. Maull, postmaster, Lewes, Del.	do	1867	72 58
8500	Lucy H. W. Jackson, postmaster, Lincoln, Del.	do	1869, 1870	57 77
8501	William H. Hobson, postmaster, Little Creek Landing, Del.	do	1871, 1872	17 40
8502	J. B. Cannon, postmaster, Lewes Cross Roads, Del.	do	1870	6 86
8503	Z. A. Pool, postmaster, McDonough, Del.	do	1867, 1868	25 40
8503	do	do	1869, 1870	52 82
8504	Ann C. Finsthwait, postmaster, Magnolia, Del.	do	1871, 1872	79 44
8505	Milton Steele, postmaster, Mermaid, Del.	do	1867, 1868	3 84
8506	George F. Burton, postmaster, Millsbor- ough, Del.	do	1873, 1874	40 96
8607	T. S. Atkins, postmaster, Milton, Del.	do	1867, 1868	68 46
8508	J. Drennan, postmaster, Newark, Del.	do	1867, 1868	153 30
8509	Joseph Hall, postmaster, Ocean View, Del.	do	1869, 1870	29 18
8510	Joseph H. Thomas, postmaster, Pearson's Corners, Del.	do	1867, 1868	5 26
8510	do	do	1873, 1874	2 04
8511	A. Buckingham, jr., postmaster, Pleasant Hill, Del.	do	1866, 1868	8 38
8511	do	do	1869, 1870	9 66
8511	do	do	1871, 1872	18 14
8512	James A. Evans, postmaster, Redden, Del.	do	1871, 1872	7 58
8213	George C. Webb, postmaster, Saint George, Del.	do	1867	25 09
8514	R. P. Towsesey, postmaster, Saint George, Del.	do	1867, 1868	175 61
8515	William G. Davis, postmaster, Shelby- ville, Del.	do	1869, 1870	37 74
8516	R. W. Mulford, postmaster, Summit Bridge, Del.	do	1867, 1868	18 42
8517	William C. Quillon, postmaster, Vernon, Del.	do	1871, 1873	4 98
8517	do	do	1873	89
8518	Henry Blair, postmaster, Belleville, Fla.	do	1873, 1874	30 14
8519	E. L. Ware, postmaster, Key West, Fla.	do	1871, 1872	376 02
8519	do	do	1873, 1874	1,344 94
8520	W. F. Moore, postmaster, Madison, Fla.	do	1869	124 93
8521	Alf. Osgood, postmaster, Madison, Fla.	do	1870	250 24
8522	Ozias Budington, postmaster, Middle- burg, Fla.	do	1873, 1874	9 16

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8523	C. A. Cowgill, postmaster, Orange Wells, Fla.	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1884 and prior years.	1871, 1872	\$18 20
8523	do	do	1873	6 74
8524	E. W. Speir, postmaster, Orlando, Fla.	do	1871, 1872	15 58
8525	W. C. Snow, postmaster, Palatka, Fla.	do	1871, 1872	217 80
8525	do	do	1873	150 19
8526	William L. Daniels, postmaster, Port Orange, late Orange, Fla.	do	1872	4 94
8526	do	do	1873, 1874	27 42
8527	C. Slager, postmaster, Tampa, Fla.	do	1872	68 10
8528	M. C. Robinson, postmaster, Vernon, Fla.	do	1871, 1872	21 72
8528	do	do	1873, 1874	54 96
8529	Madison Dodd, postmaster, Alpharetta, Ga.	do	1871, 1872	16 02
8529	do	do	1873	32 26
8530	W. O. Shields, postmaster, Appling, Ga.	do	1871, 1872	35 54
8530	do	do	1872	10 32
8531	A. S. Hardin, postmaster, Appling, Ga.	do	1874	30 94
8532	Louisa Castleberry, postmaster, Auraria, Ga.	do	1870	3 42
8532	do	do	1871, 1872	6 78
8533	J. S. Wilson, postmaster, Bairdstown, Ga.	do	1871, 1872	52 52
8533	do	do	1873, 1874	62 50
8534	H. D. Leitner, postmaster, Brezelia, Ga.	do	1869, 1870	50 56
8534	do	do	1871, 1872	52 42
8535	J. O. Spann, postmaster, Bethany, Ga.	do	1872	17 21
8535	do	do	1873, 1874	101 92
8536	Joseph M. Chambers, postmaster, Big Savannah, Ga.	do	1871, 1872	9 90
8537	W. T. McMichael, postmaster, Blackshear, Ga.	do	1869	21 50
8538	Benjamin M. Fryer, postmaster, Blakeley, Ga.	do	1871, 1872	75 36
8538	do	do	1873, 1874	61 48
8539	J. N. Shelnutt, postmaster, Bowdon, Ga.	do	1872	134 06
8540	B. Bowers, postmaster, Bowersville, Ga.	do	1872	10 42
8541	Frank Dean, postmaster, Buchanan, Ga.	do	1872	11 00
8542	Charles Mulkey, postmaster, Butler, Ga.	do	1869, 1870	49 12
8543	George W. Rauson, postmaster, Calhoun, Ga.	do	1873, 1874	139 62
8544	H. Fairbank, postmaster, Calvary, Ga.	do	1873, 1874	9 82
8545	John B. Wooddall, postmaster, Campbelltown, Ga.	do	1871, 1872	30 84
8545	do	do	1873, 1874	40 12
8546	R. F. Daniel, postmaster, Canton, Ga.	do	1871, 1872	61 32
8546	do	do	1873, 1874	35 30
8547	E. E. Pitchford, postmaster, Cataula, Ga.	do	1869, 1870	60 90
8547	do	do	1871, 1872	31 68
8547	do	do	1873, 1874	32 03
8548	Henry May, postmaster, Cedartown, Ga.	do	1869, 1870	97 02
8548	do	do	1871, 1872	31 99
8549	W. C. Knight, postmaster, Cedartown, Ga.	do	1872	85
8550	Robert A. Cheney, postmaster, Chalybeate Springs, Ga.	do	1871, 1872	46 74
8550	do	do	1872	5 80
8551	Celia A. R. Daniels, postmaster, Colquitto, Ga.	do	1869, 1870	19 90
8552	J. D. McLinden, postmaster, Concord, Ga.	do	1873, 1874	18 06
8553	W. E. McCalla, postmaster, Conyers, Ga.	do	1869	36 23
8554	Aaron W. Woody, postmaster, Dahlonaga, Ga.	do	1871	31 32
8555	M. C. Hester, postmaster, Dublin, Ga.	do	1872	79 51
8556	Amos L. Vail, postmaster, Elberton, Ga.	do	1871	25 03
8557	Thomas M. Swift, postmaster, Elberton, Ga.	do	1872	41 19
8558	William H. Scoville, postmaster, Ellaville, Ga.	do	1869, 1870	37 38
8559	J. M. Watkins, postmaster, Ellijay, Ga.	do	1869	2 22

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8560	John M. Greer, postmaster, Ellijay, Ga . . .	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1884 and prior years.	1870	\$4 44
8560	do	do	1872	5 66
8561	E. C. McCullough, postmaster, Floyd Springs, Ga.	do	1868	2 14
8562	S. P. Bond, postmaster, Franklin Springs, Ga.	do	1873, 1874	20 60
8563	John R. M. Neel, postmaster, Georgetown, Ga.	do	1871, 1872	48 18
8564	J. B. Jones, postmaster, Herndon, Ga . . .	do	1873, 1874	118 37
8565	T. G. Goss, postmaster, Houston, Ga. . . .	do	1872	44 52
8565	do	do	1873, 1874	42 36
8566	Pleasant Short, postmaster, Ivy Log, Ga.	do	1873, 1874	7 86
8567	Jonathan D. Wynn, postmaster, Jacksonville, Ga.	do	1872	17 35
8568	James H. Rogers, postmaster, La Fayette, Ga.	do	1871, 1872	47 46
8568	do	do	1873, 1874	42 64
8569	Lucy Claiborne, postmaster, Lawrenceville, Ga.	do	1871, 1872	39 41
8570	John P. Brown, postmaster, Liberty Hill, Ga.	do	1870	8 23
8571	Herbert D. Ingersoll, postmaster, Loudsville, Ga.	do	1871, 1872	17 14
8571	do	do	1872	68
8572	E. J. Pannal, postmaster, Loudsville, Ga.,	do	1869, 1870	62 50
8572	do	do	1871, 1872	157 08
8572	do	do	1873, 1874	140 90
8573	Mrs. Fanny Teagle, postmaster, Luthersville, Ga.	do	1871, 1872	11 08
8573	do	do	1873, 1874	24 84
8574	James T. Whaley, postmaster, Mayfield, Ga.	do	1869, 1870	41 84
8574	do	do	1871, 1872	53 98
8575	W. L. Zachry, postmaster, Monticello, Ga.	do	1871, 1872	28 15
8576	R. A. Morgan, postmaster, Morganville, Ga.	do	1869, 1870	4 46
8576	do	do	1873, 1874	25 46
8577	Joseph R. Dean, postmaster, Nacoochee, Ga.	do	1871, 1872	23 58
8578	George Russell, postmaster, Newton Factory, Ga.	do	1873, 1874	2 59
8579	Sallie V. Holsenbake, postmaster, Oglethorpe, Ga.	do	1873, 1874	46 71
8580	John A. Donald, postmaster, Ophir, Ga . .	do	1873, 1874	13 44
8581	A. D. Bridgeman, postmaster, Panamora, Ga.	do	1871, 1872	44 43
8581	do	do	1873, 1874	22 16
8582	Caleb Conley, postmaster, Pond Spring, Ga.	do	1871, 1872	6 14
8582	do	do	1873, 1874	4 47
8583	N. A. R. Davenport, postmaster, Preston, Ga.	do	1871	34 08
8584	R. W. Weatherby, postmaster, Red Clay, Ga.	do	1871, 1872	58 84
8584	do	do	1872	5 44
8585	Robert Lester, postmaster, Reidsville, Ga.	do	1872	13 41
8586	John Hill, postmaster, Resaca, Ga. . . .	do	1869, 1870	18 11
8586	do	do	1871, 1872	38 00
8586	do	do	1873, 1874	37 60
8587	Henry Hodges, postmaster, Reynolds, Ga.	do	1871, 1872	48 86
8588	John G. Hale, postmaster, Rising Fawn, Ga.	do	1871, 1872	74 06
8589	T. D. Adams, postmaster, Roswell, Ga. . .	do	1869, 1870	39 26
8589	do	do	1873, 1874	113 06
8590	W. M. Murphy, postmaster, Snapping Shoals, Ga.	do	1873, 1874	23 30
8591	J. F. Spruill, postmaster, Stilesborough, Ga.	do	1869, 1870	62 74

Reported by the Sixth Auditor, &c.—Continued.

No. of certifi- cate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expendi- ture was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8591	J. F. Sproull, postmaster, Stilesborough, Ga.	Compensation of postmas- ters readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1884 and prior years.	1871, 1872	\$66 24
8591	do	do	1873, 1874	22 50
8592	D. J. Hammond, postmaster, Summerville, Ga.	do	1871, 1872	85 80
8593	Mary E. Brown, postmaster, Suwanee, Ga.	do	1871, 1872	11 76
8593	do	do	1873, 1874	18 36
8594	Joseph Jackson, postmaster, Talbotton, Ga.	do	1869, 1870	144 30
8595	R. W. Neal, postmaster, Thomson, Ga.	do	1873, 1874	71 92
8596	C. M. Lindsay, postmaster, Toombsborough, Ga.	do	1871, 1872	55 22
8597	T. R. Smith, postmaster, Valdosta, Ga.	do	1873, 1874	156 30
8598	W. B. Candler, postmaster, Villa Rica, Ga.	do	1871, 1872	19 00
8598	do	do	1873, 1874	26 68
8599	Samuel Brodnat, postmaster, Walnut Grove, Ga.	do	1871, 1872	28 88
8599	do	do	1873, 1874	28 22
8600	J. T. Mulkey, postmaster, Walton's Ford, Ga.	do	1873, 1874	10 14
8601	N. T. Handley, postmaster, Warm Springs, Ga.	do	1873, 1874	15 28
8602	George W. Morgan, postmaster, Washing- ton, Ga.	do	1873, 1874	157 46
8603	Benjamin Hirsch, postmaster, Waynes- ville, Ga.	do	1873, 1874	15 56
8604	John S. Stevens, postmaster, White Plains, Ga.	do	1871, 1872	19 34
8604	do	do	1873, 1874	63 26
8605	Mary G. McGee, postmaster, White Sul- phur Springs, Ga.	do	1871, 1872	124 82
8605	do	do	1873, 1874	88 76
8606	A. M. Mulholland, postmaster, Whites- ville, Ga.	do	1871, 1872	43 41
8607	J. A. Pinney, postmaster, Idaho City, Idaho.	do	1871, 1872	653 16
8607	do	do	1873	205 20
8608	J. H. Ralston, postmaster, Placeville, Idaho.	do	1867, 1868	260 96
8608	do	do	1869, 1870	48 74
8608	do	do	1871, 1872	63 12
8608	do	do	1873, 1874	40 28
Total compensation of postmasters readjusted under act of March 3, 1883.				35,761 40
8609	M. E. Irwin, late postmaster at Verona, Iowa, for amount of commission in third quarter 1878.	Deficiency in postal reve- nues, 1884 and prior years.	1879	3 81
8610	J. C. Duypayster, late postmaster at Wickliffe, Ky., for amount of clerk hire under-credited in second quarter 1881.	do	1881	22 50
8611	Mary E. Newton, late postmaster at Vance- burgh, Ky., for amount of clerk hire un- der-credited in second quarter 1881.	do	1881	18 05
8612	Mary E. Newton, late postmaster at Vance- burgh, Ky., for amount of clerk hire un- der-credited in third quarter 1881.	do	1882	8 20
8613	Occidental and Oriental S. S. Co., for trans- porting foreign closed mails from the United States to Hong-Kong and Yoko- hama during the period from April 1, 1879, to June 30, 1883, per order of Post- master-General No. 14833, dated Sep- tember 20, 1886.	do	1 7 3	218 26

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8614	Panama R. R. Co., for transporting the United States mails for the west coast of Mexico, Salvador, Republic of Honduras, Nicaragua, and Costa Rica, across the Isthmus of Panama, from April 1, 1879, to June 30, 1883, per order of Postmaster-General No. 13172, dated August 11, 1886.	Deficiency in postal revenues, 1884 and prior years.	1879-1883	\$2,916 05
8615	Red D. Line, for transporting foreign closed mails from the United States to Curacao, from January 1 to June 30, 1883, per order of Postmaster-General No. 15331, dated September 27, 1886.	do	1883	22 73
8616	Quebec S. S. Co., for transporting foreign closed mails from the United States to Barbadoes, Demerara, Trinidad, Grenada, and St. Thomas, from January 1, 1881, to June 30, 1883, per order of Postmaster-General No. 14838, dated September 20, 1886.	do	1881-1883	6 67
8617	Pacific Mail S. S. Co., for transporting foreign closed mails from the United States to Hong-Kong and Yokohama, from January 1, 1881, to June 30, 1883, per order of Postmaster-General No. 15034, dated September 27, 1886.	do	1881-1883	171 27
8618	The Cunard Line, for transporting foreign closed mails from the United States to Europe from April 1, 1879, to June 30, 1883, per order of Postmaster-General No. 13,876, dated August 26, 1886.	do	1879-1883	17,982 00
8619	The Inman Line, for transporting foreign closed mails from the United States to Europe from April 1, 1879, to June 30, 1883, per order of Postmaster-General No. 13882, dated August 26, 1886.	do	1879-1883	4,391 11
8620	Hamburg American Packet Co., for transporting foreign closed mails from the United States to Europe from April 1, 1879, to June 30, 1883, per order of Postmaster-General No. 13888, dated August 26, 1886.	do	1879-1883	716 26
8621	North German Lloyd S. S. Co., for transporting foreign closed mails from the United States to Europe from April 1, 1879, to June 30, 1883, per order of Postmaster-General No. 13219, dated August 12, 1886.	do	1879-1883	634 42
8622	White Star Line, for transporting foreign closed mails from the United States to Europe from April 1, 1879, to June 30, 1883, per order of Postmaster General No. 13879, dated August 26, 1886.	do	1879-1883	5,795 89
8623	The Liverpool and Great Western Steamship Company, for transporting foreign closed mails from the United States to Europe from April 1, 1879, to June 30, 1883, per order of Postmaster General No. 13885, dated August 26, 1886.	do	1879-1883	2,466 98
8624	New York, Havana and Mexican Mail Steamship Company: For transporting French closed mails from United States to Cuba from August 22, 1878, to June 30, 1883, per order of Postmaster-General No. 16455, dated October 29, 1886.	do	1879-1883	2,291 31
	For transporting French closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of Postmaster-General No. 16455, dated October 29, 1886.	do	1884	823 12
				<u>3,114 43</u>

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8625	New York, Havana and Mexican Mail Steamship Company: For transporting foreign (except French) closed mails from the United States to Cuba during the six months ended June 30, 1883, per order of Postmaster-General No. 16459, dated October 29, 1886.	Deficiency in postal revenues, 1884 and prior years.	1883	\$366 75
	For transporting foreign (except French) closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of Postmaster-General No. 16460, dated October 29, 1886.	do	1884	733 49
				<u>1,100 24</u>
8626	New York and Cuba Mail Line: For transporting French closed mails from the United States to Cuba from August 17, 1878, to June 30, 1883, per order of Postmaster-General No. 16462, dated October 29, 1886.	do	1879-1883	1,923 62
	For transporting French closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of Postmaster-General No. 16463, dated October 29, 1886.	do	1884	337 02
				<u>2,260 64</u>
8627	New York and Cuba Mail Line For transporting foreign (except French) closed mails from the United States to Cuba during the six months ended June 30, 1883, per order of Postmaster-General No. 16466, dated October 29, 1886.	do	1883	192 25
	For transporting foreign (except French) closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of Postmaster-General, No. 16467, dated October, 29, 1886.	do	1884	262 11
				<u>394 36</u>
8628	James N. Taylor, L. P. M., Reese, Mich., for mail-messenger service for quarter ended June 30, 1882, as per orders of Postmaster-General of June 5, 1880, and May 22, 1882.	do	1882	37 50
8629	William H. Gounett, postmaster, Piermont, N. H., for mail-messenger service from April to June 30, 1883, per order of the Postmaster-General, dated January 2, 1878.	do	1883	28 00
8630	Carl Greenwood, special carrier, Blaine, Minn., amount due for services as special carrier from July 1, 1882, to June 30, 1884.	do	1883-1884	9 41
8631	Mary Meyer, postmaster, Banner, Wis., for amount paid W. E. Meyer, special carrier for services rendered from October 1, 1882, to December 31, 1882, as per voucher on file.	do	1883	3 77
8632	L. A. Hood, postmaster, Fisher's Island, N. Y., for amount paid James Darrow, special carrier, for services rendered from July 1, 1882, to September 30, 1882, as per voucher on file.	do	1883	40 54
8633	Chicago, Milwaukee and Saint Paul, R'w'y Co.: For deduction remitted December 11, 1886, being part of the deduction (\$340.08) reported to Auditor April 30, 1881, on account of failure first quarter 1881, route No. 26012, Minnesota.	do	1881	19 50

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8633	Chicago, Milwaukee and Saint Paul R'wy Co.—Continued. For deduction remitted December 11, 1886, being part of the deduction (\$2.18) reported to Auditor August 5, 1882, on account of failure second quarter 1882, route No. 26012, Minnesota.	Deficiency in postal revenues, 1884 and prior years.	1882	\$0 12
	For deduction remitted December 11, 1886, being part of the deduction (\$296.48) reported to Auditor May 5, 1883, on account of failure first quarter 1883, route No. 26012, Minnesota.	do	1883	17 00
	For deduction remitted December 11, 1886, being part of the deduction (\$4.36) reported to Auditor July 24, 1883, on account of failure second quarter 1883. Route No. 26012, Minnesota.	do	1883	24
	For deduction remitted December 11, 1886, being part of the deduction (\$6.93) reported to Auditor May 8, 1884, on account of failure first quarter 1884, route No. 26012, Minnesota.	do	1884	40
				<u>37 26</u>
8634	Northern Pacific R. R. Co.: For transportation additional, at \$25 per quarter, from December 17, 1877, to June 30, 1878, per order of Postmaster-General No. 743, dated January 26, 1885. Route No. 26021, Minnesota.	do	1878	54 08
	For transportation additional, at \$23.74½ per quarter, from July 1, 1878, to June 30, 1879, per order of Postmaster-General No. 743, dated January 26, 1885. Route No. 26021, Minnesota.	do	1879	94 98
	For transportation additional, at \$23.74½ per quarter, from July 1, 1879, to June 30, 1880, per order of Postmaster-General No. 741, dated January 26, 1885. Route No. 26002, Minnesota.	do	1880	94 98
	For transportation additional, at \$23.74½ per quarter, from July 1, 1880, to June 30, 1881, per order of Postmaster-General No. 741, dated January 26, 1885. Route No. 26002, Minnesota.	do	1881	94 98
	For transportation additional, at \$23.74½ per quarter, from July 1, 1881, to June 30, 1882, per order of Postmaster-General No. 741, dated January 26, 1885. Route No. 26002, Minnesota.	do	1882	94 98
				<u>434 00</u>
8635	Northern Pacific R. R. Co.: For transportation additional, at \$45.86 per quarter, from July 1, 1883, to January 20, 1884, per order of Postmaster-General No. 742, dated January 26, 1885. Route No. 26002, Minnesota.	do	1884	101 80
	For transportation additional, at \$62.78 per quarter, from January 21 to June 30, 1884, per order of Postmaster-General No. 740, dated January 26, 1885. Route No. 26001, Minnesota.	do	1884	111 76
				<u>213 56</u>
8636	Northern Pacific R. R. Co., for transportation additional, at \$715.10 per quarter, from June 2 to June 30, 1884, per order of Postmaster-General No. 10840, dated July 21, 1885. Route No. 26042, Minnesota.	do	1884	<u>227 89</u>

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8637	St. Louis and Cairo Railroad Company: For deduction remitted July 22, 1886, being a part of deduction (\$52.23) reported to Auditor January 24, 1884, on account of failures in the fourth quarter, 1883. Route No. 23053, Illinois.	Deficiency in postal revenues, 1884 and prior years.	1884	\$6 07
	For deduction remitted July 22, 1886, being a part of deduction (\$591.94) reported to Auditor May 6, 1884, on account of failure in first quarter, 1884. Route No. 23053, Illinois.	do	1884	434 14
	For deduction remitted July 22, 1886, being a part of deduction (\$147.98) reported to Auditor July 18, 1884, on account of failure in second quarter, 1884.	do	1884	120 42
				<u>560 63</u>
8638	Texas and Pacific R'w'y Co., for remission of reduction in third quarter 1882, 47 cents; fourth quarter of 1882, \$2.58; first quarter of 1883, \$2.82; per orders of the Postmaster-General dated December 13, 1886. Route No. 31009, Texas.	do	1883	<u>5 87</u>
8639	Cincinnati, Indianapolis, Saint Louis, and Chicago R'w'y Co.: Remission of deduction in second quarter, 1883, per order of Postmaster-General dated December 15, 1886. Route No. 22003, Indiana.	do	1883	<u>144 45</u>
	Remission of deduction in fourth quarter, 1883, per order of Postmaster-General, dated December 15, 1886. Route No. 22003, Indiana.	do	1884	49 35
	Remission of deduction in fourth quarter, 1883, per order of Postmaster-General, dated December 14, 1886. Route No. 22005, Indiana.	do	1884	3 33
				<u>197 13</u>
8640	Louisville, New Orleans, and Texas R'w'y Co., for transportation, at \$2,025.58 per quarter, from March 20 to June 30, 1884, per order of Postmaster-General No. 1161, dated February 9, 1886. Route No. 30014, Louisiana, amounting to \$2,292.69; less reductions, \$22.18.	do	1884	<u>2,270 51</u>
8641	Texas and Western R'w'y Co., for transportation, at \$119.70 per quarter, from August 1, 1882, to June 30, 1883, per order of Postmaster-General No. 6949, dated June 1, 1886. Route No. 31020, Texas, amounting to \$438.47; less reductions, \$59.85.	do	1883	<u>378 62</u>
8642	Texas and Western R'w'y Co., for transportation, at \$119.70 per quarter, from July 1, 1883, to June 30, 1884, per order of Postmaster-General No. 6946, dated June 1, 1886. Route No. 31020, Texas, amounting to \$478.80; less reductions, \$220.32.	do	1884	<u>258 48</u>
8643	George K. Otis, contractor: For remission of reduction from April 1 to June 30, 1882. Route No. 6771, New York.	do	1882	111 41

Reported by the Sixth Auditor, &c.—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
POST-OFFICE DEPARTMENT—Cont'd.				
CLAIMS—continued.				
8643	George K. Otis, contractor—Continued. For remission of deductions from April 1 to June 30, 1882. Route No. 6772, New York.	Deficiency in postal revenues, 1884 and prior years.	1882	\$56 71
	For remission of reductions from July 2, 1882, to June 30, 1883. Route No. 6771, New York.	do	1883	154 39
	For remission of reductions from July 1, 1882, to June 30, 1883. Route No. 6772, New York.	do	1883	625 23
				<u>947 74</u>
8644	A. T. Bush, late contractor, for amount of Auditor's draft, No. 8971, dated November 5, 1860, drawn on E. Taylor, postmaster at Calhoun, Mo., returned to the office unpaid and canceled. Route No. 10567, Missouri.	do	1861	<u>143 81</u>
8645	J. H. Finks, clerk of United States district court for the northern district of Texas. For fees in civil post-office cases from July 1, 1883, to June 30, 1884, viz: U. S. vs. C. W. Clifton, L. P. M. Greenwood, Texas, \$1.40; U. S. vs. Thos. D. Farris, L. P. M. Grandview, Texas, \$38.15.	do	1884	39 55
8646	John Grant, late contractor, for transportation from January 1, to March 31, 1861, at \$2,500 per annum, route No. 8157, Louisiana, amounting to the sum of \$625, less amount of collections from the postmasters on the route for the quarter ended March 31, 1861. Route No. 8157, amounting to the sum of \$69.08.	do	1861	<u>555 92</u>
	Total of scheduled claims for deficiency in postal revenue, 1884 and prior years.	do		<u>48,634 96</u>
	Total claims allowed by the Sixth Auditor.	do		<u>84,396 36</u>

SUMMARY OF CLAIMS.

State Department:	
Foreign intercourse.....	\$738 40
Treasury Department:	
Internal Revenue.....	4,575 55
Customs.....	53,270 33
Miscellaneous	4 30
	57,850 18
War Department:	
Second Auditor's accounts, Army.....	350,733 72
Third Auditor's accounts, Army	421,543 18
	772,276 90
Navy Department:	
Fourth Auditor's accounts, Navy.....	20,752 42
Interior Department:	
Civil.....	276 55
Public lands	3,375 04
Indians.....	2,225 91
Pensions	394 83
	6,272 33
Department of Agriculture.....	39 00
Post-Office Department:	
Postal service	84,396 36
Department of Justice:	
Judicial expenses	1,029 20
Total	943,354 79

DISTRIBUTION OF MINOR COINS.

L E T T E R

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A letter from the Director of the Mint, suggesting amendments to the Revised Statutes relative to the issue and redemption of minor coin.

JANUARY 4, 1887.—Referred to the Committee on Coinage, Weights, and Measures and ordered to be printed.

TREASURY DEPARTMENT, *December 22, 1886.*

SIR: I have the honor to submit herewith, for the consideration of House of Representatives, copy of letter dated 14th instant, from the Director of the Mint, concurred in by the Treasurer of the United States, suggesting certain amendments to the Revised Statutes of the United States which will tend to obviate the difficulties arising from the execution of the present laws governing the issue and redemption of minor coin as pointed out in the Director's communication.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES,
Washington, D. C.

TREASURY DEPARTMENT, BUREAU OF THE MINT,
Washington, D. C., December 14, 1886.

SIR: The following sections of the Revised Statutes bearing upon the issue and redemption of minor coin are the authority for the present practice of the Treasury Department in its relations to the circulation of these coins:

SEC. 3528. For the purchase of metal for the minor coinage authorized by this title, a sum not exceeding \$50,000 in lawful money of the United States shall be transferred by the Secretary of the Treasury to the credit of the superintendent of the mint at Philadelphia, at which establishment only, until otherwise provided by law, such coinage shall be carried on. The superintendent, with the approval of the Director of the Mint as to price, terms, and quantity, shall purchase the metal required for such coinage by public advertisement, and the lowest and best bid shall be accepted, the fineness of the metals to be determined on the mint assay. The gain arising from the coinage of such metals into coin of a nominal value, exceeding the cost thereof,

shall be credited to the special fund denominated the minor-coinage profit fund; and this fund shall be charged with the wastage incurred in such coinage, and with the cost of distributing said coins as hereinafter provided. The balance remaining to the credit of this fund, and any balance of profits accrued from minor coinage under former acts, shall be, from time to time, and at least twice a year, covered into the Treasury.

SEC. 3529. The minor coins authorized by this title may, at the discretion of the Director of the Mint, be delivered in any of the principal cities and towns of the United States, at the cost of the Mint for transportation, and shall be exchangeable at par at the mint in Philadelphia, at the discretion of the superintendent, for any other coins of copper, bronze, or copper-nickel heretofore authorized by law. It shall be lawful for the Treasurer, and the several assistant treasurers and depositaries of the United States to redeem, in lawful money, under such rules as may be prescribed by the Secretary of the Treasury, all copper, bronze, and copper-nickel coins authorized by law when presented in sums of not less than \$20. Whenever, under this authority, these coins are presented for redemption in such quantities as to show the amount outstanding to be redundant, the Secretary of the Treasury is authorized and required to direct that such coinage shall cease until otherwise ordered by him.

The experience of the last year has shown conclusively that minor coins may accumulate in the Treasury and subtreasuries of the United States, at present the only agencies for the redemption of minor coin, while at the same time there may exist a pressing demand for the same class of coin from parts of the United States remote from the Treasury and its branches.

Again, there may be accumulations at the Treasury or at certain subtreasuries of the United States, while, at the same time, there may exist a demand at commercial centers, even where other subtreasuries are located. Yet no specific appropriation for this particular purpose is available for the transfer from one subtreasury to another of minor coin found to be in excess of the demand at the locality where any such excess may happen.

A portion of the minor coin making up any accumulation in the Treasury or subtreasuries, and likely to be taken as tending to show redundancy, is unavailable for reissue without cleansing or recoinage. Yet uncurrent coin of this description has until recently been reported in the Treasury statements without discrimination as such. All transfers of coin for cleansing and reissue or for recoinage can be made only by special appropriations. Such appropriations are estimated for by the Secretary of the Treasury to cover the cost of transportation to the Mint at Philadelphia, and also to cover the loss between the nominal value of old coin and its final yield upon recoinage. It seems that a redundancy has been assumed to exist whenever notable accumulations have been reported at the Treasury or subtreasuries of the United States.

Under section 3528, the coinage of minor coin can be carried on only at the Mint at Philadelphia. All operations in the way of the renewal of coin unsuitable for reissue are likewise confined to this mint. A special fund, denominated the "minor coinage profit fund," is an account with the Mint at Philadelphia alone, from which fund the cost of distributing said coins is paid, as provided by section 3528.

At the discretion of the Superintendent, and at the cost of the Mint at Philadelphia, namely, the minor coinage profit fund, under section 3529, minor coins are redeemable, in kind, by the issue of new coin to applicants anywhere within the United States. This transportation is by contract, at present with the Adams Express Company.

The provisions of law above briefly cited tend to the ultimate redemption of minor coin by the Mint at Philadelphia. This is effected, however, only through the Treasury and subtreasuries of the United States from time to time, but not without delay for want of available appro-

priation for its movement. All other movement of minor coin from the Treasury and subtreasuries is, except in extraordinary cases, at the hands of applicants in person. Hence redundancy at subtreasuries independent of the demand of the general public beyond convenient reach of such depositories, while it happens that the coin redeemed by the subtreasuries readily passes again into circulation, other than local, only through the Mint at Philadelphia. This is due to several reasons, of which the following may be mentioned: First, the circumstance that the cost of distribution from this mint alone is defrayed by the Government; second, the popular preference of applicants for fresh coin as compared with coin which has been in use.

It may be proper to remark that there is reason to believe that a part of the demand for minor coin, which has arisen to an unprecedented extent during the latter part of the last twelve months, during the first part of which period the coinage of minor coin had not been resumed since February 16, 1885, is at least unreasonable, it having appeared that, in the exercise of a preference for fresh coin, applications to the Mint at Philadelphia for large sums of minor coin have been made from the very cities where an accumulation was reported in the subtreasuries.

The Treasury and the nine subtreasuries act as redemption agencies for minor coin. As above intimated, there is reason to believe that it has become a trade custom in the case of many persons, who in the course of their business receive the largest quantities of minor coin, and in whose hands it thus accumulates, to send their surplus to the subtreasuries for redemption, while the same persons are among the most frequent applicants at the Mint at Philadelphia for fresh supplies of coin, mainly, it is presumed, for the sake of obtaining bright, new coin for daily use.

Such a practice must, in the measure of its adoption, tend to the ultimate redundancy of this class of coin through its coinage beyond the reasonable demands of the public.

This redundancy might be checked and the circulation of minor coin properly controlled if, instead of so many redemption agencies, the Mint at Philadelphia were constituted the sole redemption agency for minor coin. But such a measure is regarded as undesirable, as it would result in throwing upon this single institution the whole burden of accounting for surplusage whenever it occurs, instead of this onerous work being divided, as at present, between the Treasury and its several branches.

The ends which might be accomplished directly by a measure to which the objections have already been stated may, it is believed, be indirectly accomplished by other expedients, which I will proceed to formulate by way of an amendment of the Revised Statutes for consideration of Congress, after reciting its objects, as follows:

(1) To facilitate the proper discernment between redundancy of minor coin on the one hand and the public demand for the same class of coin on the other.

(2) To make available accumulations of minor coin in the hands of the Government for the purpose of supplying the demand wherever it may occur.

(3) To prevent redundancy through recoinage, for want of uniform action between the Treasury and the Bureau of the Mint.

(4) To discriminate against unreasonable demands for new coin where current old coin is available.

(5) To prevent undue redemption of minor coin and its withdrawal from circulation.

(6) To promote the equality of its circulation in different parts of the country.

It is believed that the above ends can be attained by amendments of the Revised Statutes as follows, namely, of section 3529, so as to read, after the last word in said section :

And in order to supply any demand upon the Mint at Philadelphia for minor coins during the suspension of such coinage from the redundancy in the Treasury of the United States, the Secretary of the Treasury is authorized and required to cause to be transferred from the Treasury of the United States to the Mint at Philadelphia for recoinage or for cleaning and reissue, minor coins of such denominations as may be necessary to enable the Superintendent of the Mint to supply demands upon him for the same.

And of section 3528 of the Revised Statutes so that the last clause shall read, instead of—

“The balance remaining to the credit of this fund, and any balance of profits accrued from minor coinage under former acts, shall be, from time to time, and at least twice a year, covered into the Treasury”

as follows :

The balance remaining to the credit of this fund shall be at least once a year covered into the Treasury, except such sums, to be estimated by the Superintendent of the Mint at Philadelphia and approved by the Director of the Mint, as may be deemed necessary to pay the expense of, and incidental to, the distribution of minor coin during such periods as the coinage of minor coin shall be suspended by order of the Secretary of the Treasury: *Provided*, That the sum so retained by the Superintendent of the Mint at Philadelphia from the balance before mentioned shall not exceed twenty-five thousand dollars.

The above amendments contemplate the payment of the cost of transfer of minor coin from the Treasury and subtreasuries to the Mint at Philadelphia for recoinage and cleaning for reissue, as heretofore, by special appropriations estimated for from year to year by the Secretary of the Treasury. It is not deemed desirable to pay the cost of such transfer from the minor-coinage profit fund, for the reason that this fund is expended by the Mint at Philadelphia subject to the approval of the Director of the Mint, while the transfer of minor coin to the Mint at Philadelphia is regulated by the Treasury of the United States. It is regarded impracticable for the same fund to be used and accounted for by two distinct branches of the Treasury Department.

The balance of profits accrued from minor coinage under former acts, provided for in section 3528, was long since covered into the Treasury.

The above facts are brought to your notice for consideration and the above measure proposed, trusting that, should the latter meet with your concurrence, you may be pleased to lay the whole before Congress.

Very respectfully,

JAS. P. KIMBALL,
Director of the Mint.

The SECRETARY OF THE TREASURY.

I fully concur in the within statement. The remedy proposed would, in my opinion, carry out the purpose for which it is devised.

C. N. JORDAN,
Treasurer United States.

LOUISVILLE AND PORTLAND CANAL—DRAINAGE RIGHTS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A report of the Chief of Engineers, in response to a resolution of the House calling for information relative to the right of the city of Louisville to drainage into the Louisville and Portland Canal.

JANUARY 5, 1887.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 22, 1886.

The Secretary of War has the honor to transmit to the House of Representatives a report of the Chief of Engineers, U. S. Army, dated July 17, 1885, in response to the resolution of the House of Representatives of July 9, 1885, as follows :

Whereas by the terms of the joint resolution of the legislature of the State of Kentucky, approved March 28, 1872, transferring the control and management of the Louisville and Portland Canal to the Government of the United States, it is expressly provided that the right of drainage into said canal is reserved to the city of Louisville; and

Whereas it is reported that the United States Engineers in charge of said canal have objected to the exercise of that right upon the part of the city of Louisville: Therefore,

Resolved, That the Secretary of War be, and is hereby, directed to report to Congress whether, in his judgment, said right of drainage should be conceded to the city of Louisville, and, if not, the reason therefor, together with such information upon the subject as may to him seem proper in the premises.

The report of the Chief of Engineers is accompanied with report of Maj. Amos Stickney, the officer of the Corps of Engineers in charge of the Louisville and Portland Canal, and its accompanying papers.

The Louisville and Portland Canal Company was incorporated by an act of the legislature of Kentucky approved January 12, 1825.

By an act of the Kentucky legislature approved February 21, 1842, amending the charter of the canal company, the board of president and directors of the canal company were authorized, when so directed by the stockholders thereof, to sell "the shares of stock owned by individuals in said canal to the United States." * * *

By an act of the Kentucky legislature approved February 22, 1844 further amending the charter of Louisville and Portland Canal, it was declared—

That in the event of the United States becoming the sole owner of the Louisville and Portland Canal, the jurisdiction of this commonwealth over said canal shall be yielded up to the Government of the United States.

On February 8, 1855, the Secretary of the Treasury informed the President that "the canal, with the exception of five shares, is now the property of the United States. * * *" The board of president and directors of the canal had, by the Secretary of the Treasury, been requested, each, to retain one share of the stock of the company, in order that no difficulty might arise in the management of the work.

From 1868 to 1873 the Congress of the United States made a series of appropriations for increasing the capacity of the canal.

On the 28th day of March, 1872, the legislature of Kentucky passed a joint resolution, which was approved by the governor, by which the president and directors of the Louisville and Portland Canal were directed to surrender the said canal and all the property connected therewith to the Government of the United States, upon certain terms and conditions, one of which was "that the city of Louisville shall at all times have the right of drainage into said canal: *Provided*, That the connections between the drains and the canal shall be made upon the plan to keep out mud and garbage."

In an act of Congress approved March 3, 1873, making appropriations for the repair, &c., of certain public works, &c. (17 Stats., 563), "the Secretary of the Treasury is authorized and directed to assume, on behalf of the United States, the control and management of the said canal, in conformity with the terms of the joint resolution of the legislature of the State of Kentucky approved March 28, 1872, at such time and in such manner as in his judgment the interests of the United States and the commerce thereof may require; * * *."

The Secretary of the Treasury found it impracticable to assume the control of the canal on the terms provided, and in his annual report to Congress of December 1, 1873, explained his action in the premises.

Subsequently, by an act of Congress, approved May 11, 1874, the Secretary of War was directed "to take possession of the said Louisville and Portland Canal, and all the property, real and personal, of the said company, as the property of the United States, as provided for by the act of the general assembly of the State of Kentucky, approved February 22, 1844, * * * conceding jurisdiction over said canal to the United States. * * *." Under this law and the directions of the Secretary of War of May 27, 1874, Major Weitzel, of the Engineer Corps, assumed control of the canal on the 11th of June, 1874. In this act the joint resolution of the legislature of Kentucky of March 28, 1872, is not mentioned, and in its report upon this measure the Committee on Finance of the Senate of the United States, on the 14th of April, 1874, speaks of the conditions contained in this resolution of the Kentucky legislature as "conditions *sought* to be imposed for the local advantage of the city of Louisville."

(1) Assuming that the joint resolution of the State of Kentucky of March 28, 1872, which provides that the city of Louisville may drain into the canal, is in force and binding on the United States, it certainly does not confer upon that city the right to pollute and to render foul the waters of the canal. It appears from the accompanying reports that "the nature of the drainage is surface, house (from water-closets, &c.), and from factories of all kinds"; also that "there is no provision made to prevent mud and garbage from entering the sewers except the

street catch-basins, which are trapped," and that during the months of July, August, and September "the canal becomes very offensive, especially after heavy rains, which wash the streets and flush the sewers, carrying large quantities of filth and sediment into the canal." It certainly could not have been intended by this provision in regard to drainage, which carefully excludes garbage, that all the sewage of the city should pass into the canal, thus rendering it a common nuisance.

(2) But it is not conceded that the United States took this canal subject to such restriction upon its use. The control of the canal was assumed by the Secretary of War, under the act of Congress of May 11, 1874, as provided for by the act of the general assembly of the State of Kentucky approved February 22, 1844, conceding jurisdiction over said canal to the United States. Under this act and not under the joint resolution of March 28, 1872, the United States now hold and occupy this property. It would therefore seem to be clear that the terms of the joint resolution cannot impose any conditions upon the United States or vest in the city of Louisville any right or privilege of draining into the canal.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., July 17, 1886.

SIR: I have the honor to acknowledge the reference to this office, on the 10th ultimo, of the preamble and resolution of the House of Representatives, dated the 9th June last, in reference to the drainage of the city of Louisville, Ky., into the Louisville and Portland Canal, and its right to do so, and directing the Secretary of War "to report to Congress whether in his judgment said right of drainage should be conceded to the city of Louisville, and if not, the reason therefor, together with such information upon the subject as may to him seem proper in the premises."

In reply I beg to invite attention to the accompanying copy of the report thereon from Maj. Amos Stickney, Corps of Engineers, which, with its inclosures, will, it is believed, furnish the required information.

Major Stickney states:

It appears from the terms of the recent resolution of the House of Representatives, and the letter of the acting city engineer, dated June 19, 1886, a copy of which is herewith, that the city rests its claim to drain into the canal upon the joint resolution of the Kentucky legislature alone, and as the United States accepted the canal under other State legislation and not under that resolution, the resolution can have no force in binding the United States.

Major Stickney further says:

There is no question in my mind that the city drainage should not enter the canal.

His views are worthy of consideration, and his report is commended accordingly.

The resolution of the House of Representatives is herewith respectfully returned.

Very respectfully, your obedient servant,

JOHN NEWTON,
*Chief of Engineers,
Brig. and Bvt. Maj. Gen.*

Hon. WM. C. ENDICOTT,
Secretary of War.

REPORT OF MAJOR AMOS STICKNEY, CORPS OF ENGINEERS, ON DRAINAGE OF THE CITY OF LOUISVILLE, KENTUCKY, INTO THE LOUISVILLE AND PORTLAND CANAL.

UNITED STATES ENGINEER OFFICE,
Louisville, Ky., June 29, 1886.

GENERAL: In compliance with instructions of the Engineer Department in indorsement of June 11, 1886, upon the resolution of the House of Representatives, dated June 9, 1886, relating to the right of the city of Louisville, Ky., to empty its drainage into the Louisville and Portland Canal, I have the honor to make the following report:

The original act of the general assembly of the Commonwealth of Kentucky to incorporate the Louisville and Portland Canal Company, approved January 12, 1825, and the various additional enactments under which the canal was constructed, contains no provision for, or allusion to the right of the city of Louisville to empty its drainage into the canal, and the original act of January 12, 1825, contains the following section, which might be construed as forbidding such drainage into the canal:

SEC. 10. That if any person or persons shall willfully and knowingly do any act or thing whatever whereby the said navigation or any lock-gate, dam, engine, machine, or other thing thereto belonging shall be injured or damaged or impeded, or shall commit any willful trespass, or take, carry away, or conceal any material, instrument, tool, or other thing belonging to or used in or about the said works, or shall open or cause the locks to be opened, or attempt so to do, or to pass or repass without the knowledge of the agent or manager to said canal, he, she, or they so offending shall forfeit and pay to the said canal company, their tenant or agent, three times the amount of the cost or damage sustained by means of or through such willful act, together with costs of suit, to be received before any court of competent jurisdiction, and in case of clandestinely taking and carrying away be liable to a prosecution for theft, as in other cases.

I doubt if at that time it was at all contemplated to make the still water of the canal the receptacle of the offensive matter thrown off by the city, to remain along the city front, and rot and corrupt the air under the hot summer sun.

The National Congress early took an interest in the canal, and by act approved May 13, 1826, authorized the Secretary of the Treasury to purchase a considerable amount of the stock of the canal company, and by subsequent acts increased the holding of the United States. By act approved January 21, 1842 (copy herewith), the general assembly of the Commonwealth of Kentucky authorized the sale and transfer of the canal to the Government of the United States, the only conditions being that the Government should levy tolls only sufficient to keep the canal in repair, pay all necessary superintendence, custody and expenses, and make all necessary improvements, so as fully to answer the purposes of its establishment; and, further, that the agents in charge should make certain reports to the general assembly of Kentucky, which reserves certain rights of regulating the amount of tolls. An act of the Kentucky assembly approved February 22, 1844 (copy herewith), amended the above act of January 21, 1842, so as to yield jurisdiction to the United States and relinquish the requirement concerning reports. It is under this last amendatory act of February 22, 1844, that the United States took possession of the canal by authority granted the Secretary of War in act of National Congress approved May 11, 1874 (copy herewith).

On March 28, 1872, the Kentucky legislature passed a joint resolution (copy herewith) authorizing and directing the officers of the canal

company to surrender the canal to the United States Government on certain conditions, one of which was "that the city of Louisville shall at all times have the right of drainage into said canal: *Provided*, That the connections between the drains and the canal shall be made upon the plan to keep out mud and garbage."

The river and harbor act of the National Congress, approved March 3, 1873, contained a clause (copy herewith) authorizing and directing the Secretary of the Treasury to assume the control and management of the canal, in conformity with the terms of the above joint resolution of the Kentucky legislature; but no action was taken by the Secretary of the Treasury in assuming control. It will thus be seen that the joint resolution of the Kentucky legislature of March 28, 1872, is the first and only legislation of the State that contains any reference to right of drainage into the canal, and the management of the canal by the United States was not assumed under the terms of that resolution, but under the terms of the State act of 1844, amending that of 1842, which did not give the city of Louisville the right of drainage into the canal.

It appears from the terms of the recent resolution, June 9, 1886, of the House of Representatives, and the letter of the acting city engineer, dated June 19, 1886, a copy of which is herewith, that the city rests its claim to drain into the canal upon the joint resolution of the Kentucky legislature alone, and as the United States accepted the canal under other State legislation, and not under that resolution, the resolution can have no force in binding the United States.

It appears to me, therefore, that the city of Louisville has no right to drain into the canal under the authority of any legislative action, either State or National. The question then arises, If there is no right, is there any reasonable objection?

I would call attention to the inclosed reports of Mr. C. L. Cornwell, assistant superintendent, and Mr. J. G. Durbeck, detailing some of the objections and giving analyses of the canal water made in 1876, which are immediately available. As the city increases in population, of course the organic and other deleterious matter has and will continue to increase in amount. I inclose herewith a tracing showing the river front, the canal, and adjacent streets, with their sewers. From an inspection of this map it will be seen that there now exist a number of sewers and drains that empty into the canal and river just above. When the river water-surface is low enough, during the dry hot season of the year, to prevent any flow over the dam at the head of the canal, all of the sewage as high up as Fourth street, and possibly as far up as Preston street, must flow into water which is almost stagnant, and which is drawn into the canal by the process of locking. From Preston street to the foot of the locks is a distance of about 3 miles, and the drainage that would be emptied into this, if unrestrained, would be that from at least eleven hundred and nine acres of city ground. (See letter of city engineer.) It is hardly necessary, I imagine, to adduce proof of the ill results that might be expected from the impounding of such a quantity of the decaying and fetid matter that is constantly cast off by a populous city. The health of the employés of the canal, the durability of the various structures in it, and the health and well-being of all the inhabitants of the portion of the city fronting the canal, would undoubtedly be seriously affected.

There is no question in my mind that the city drainage should not enter the canal.

The question then arises, If the city is debarred from emptying its drainage along three miles of its river front, where and how can it dispose of the drainage?

There are at least two possible solutions of this problem. One is to continue the sewers and drains or a sufficient number of them across the line of the canal to proper points in the river. This would probably be the most costly, least satisfactory, and most difficult. The other plan would be to construct an intercepting sewer inside of the canal line, extending from a point far enough above the canal to intercept all drainage that could enter the canal, to such a distance on the river below the canal as to insure reaching a constant river current. Either plan would involve the expenditure of a considerable amount of money. The source from which this money should come is a matter which, perhaps, I am not called upon to discuss. A few remarks, however, may not be amiss or inappropriate. It has been a custom pretty generally observed by cities fronting upon a large stream of water having a constant and considerable current to empty their drainage into the stream in the most direct manner possible, as being the least expensive, most advantageous, and healthful manner of disposing of all noxious material, which, if allowed to remain, would affect the health, happiness, and general prosperity of the people.

The city of Louisville is so situated with regard to the Ohio River as to make this the natural method; but for a distance of over $2\frac{1}{2}$ miles it is cut off from direct connection with the river by a large public work, which is used by and maintained for the general public. The existence of this public work and the inadvisability of permitting it to be used for drainage purposes makes it necessary for the city to adopt some method for disposing of its sewage, which is expensive and burdensome.

I presume there is no doubt of the right of the city to drain into the river above the canal, although such drainage would enter the canal. Under the circumstances there would, in my opinion, be no impropriety in the General Government affording some relief.

The following inclosures are sent herewith :

Copy of act of general assembly of Commonwealth of Kentucky approved January 21, 1842.

Copy of act of general assembly of Commonwealth of Kentucky approved February 22, 1844.

Copy of joint resolution of the Kentucky legislature, dated March 28, 1872.

Copy of act of Congress approved March 3, 1873 (extract).

Copy of act of Congress approved May 11, 1874.

Copy of letter of Major Stickney to the mayor of Louisville, Ky.

Copy of letter from assistant city engineer of Louisville, Ky.

Copy of report from C. L. Cornwell.

Tracing of map of Louisville and Portland Canal, &c.

Copy of report of J. G. Durbeck.

Very respectfully, your obedient servant,

AMOS STICKNEY,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

AN ACT to amend the charter of the Louisville and Portland Canal Company.

SECTION 1. *Be it enacted by the general assembly of the Commonwealth of Kentucky,* That the act incorporating the Louisville and Portland Canal Company shall be, and the same is hereby, so amended that whenever the stockholders in said company shall so direct, the board of president and directors of said company shall have the privilege of selling the shares of stock owned by individuals in said canal to the United States, or the State of Kentucky, or the city of Louisville, for the purpose of eventually making the said canal free of tolls; or, further to effect this object, the board of president and directors, when so authorized as aforesaid, shall hereby have the privi-

lege of appropriating the net income arising from said canal to the purchase of said stock instead of making dividends therewith.

SEC. 2. *Be it further enacted*, That whenever said stockholders shall authorize said board of president and directors to appropriate the annual net income of said company to the purchase of shares held by individuals in the same, it shall be the duty of said board to advise each stockholder of the amount to be appropriated to the purchase of shares, and propose to purchase the number of shares that the sum on hand will warrant, at the lowest bid or offer. Thirty day's notice shall be given for such offers of stock to be made.

SEC. 3. *Be it further enacted*, That the maximum price at which the said board shall purchase said shares for the first year shall not exceed the sum of one hundred and fifty dollars per share, and when the offers of said shares are made it shall be the duty of said board to accept the lowest offers for the number of shares which the net income of the preceding year will allow them to purchase; and no dividends will be paid on the remaining shares of said company after the ratification of this amended act; the maximum price paid for the shares purchased the first year and six per cent. per annum annually added thereto shall be the highest price which shall be paid for the shares in each subsequent year.

SEC. 4. *Be it further enacted*, That the shares so purchased by said board shall be held in trust by it for the purposes herein declared, and shall be voted on by them at all subsequent meetings and elections, until by the operation of the provisions of this act all the shares standing in the name of others than the Government of the United States shall have been purchased up; and when the said shares shall be all purchased the same shall be transferred to the Government of the United States, on condition of said Government levying tolls for the use of said canal only sufficient to keep the same in repair and pay all necessary superintendence, custody, and expenses, and make all necessary improvements, so as fully to answer the purposes of its establishment; and further to protect and guard the interests of commerce, the superintendents or agents in charge of said canal shall ever hereafter, on the first Monday in January, annually report to the general assembly of Kentucky the amount of tolls levied and received, and of the charges and expenses incurred on the same, the general assembly reserving the right of directing the amount annually to be collected, if found too much for the purposes contemplated by this amended act.

SEC. 5. *Be it further enacted*, That it shall be the duty of said board of president and directors to report to this general assembly, on the first Monday in January in each year, the condition of the canal and state the number of shares purchased and the amount paid for the same: *Provided*, That nothing contained in this act shall give said company the right to increase the toll allowed by the original charter.

Approved, January 21, 1842.

AN ACT to amend an act entitled "An act to amend the charter of the Louisville and Portland Canal Company," approved January 21, 1842.

Be it enacted by the general assembly of the Commonwealth of Kentucky, That in the event of the United States becoming the sole owner of the Louisville and Portland Canal, the jurisdiction of this Commonwealth over said canal shall be yielded up to the Government of the United States, and no annual report, as mentioned in the charter of the Louisville and Portland Canal Company, shall be required to be made by the United States, or the agents and superintendents of said canal, to the general assembly of this Commonwealth.

Approved, February 22, 1844.

JOINT RESOLUTION of the Kentucky legislature, March 28, 1872.

Whereas all the stock in the Louisville and Portland Canal belongs to the United States Government except five shares owned by the directors of the Louisville and Portland Canal Company, and said directors, under the authority of the legislature of Kentucky and the United States, executed a mortgage to Isaac Caldwell and Dean Richmond to secure bonds named in said mortgage, some of which are out and unpaid, and said canal company may owe other debts; and

Whereas it is right and proper that the Government of the United States should assume the control and management of said canal: Therefore, be it

Resolved by the general assembly of Kentucky, That the president and directors of the Louisville and Portland Canal Company are hereby authorized and directed to

surrender the said canal and all the property connected therewith to the Government of the United States, upon the following terms and conditions:

1. That the Government of the United States shall not levy tolls on said canal, except such as shall be necessary to keep the same in repair, pay all necessary superintendence, custody, and expenses, and make all necessary improvements.

2. That the city of Louisville shall have the right to throw bridges over the canal at such points as said city may deem proper: *Provided, always,* That said bridges shall be so located as not to interfere with the use of the canal, and so constructed as not to interfere with its navigation.

3. That the title and possession of the United States of said canal shall not interfere with the right of the State to serve criminal and civil processes, or with the State's general police power over the territory covered by said canal and its appendages.

4. *And further,* That the city of Louisville shall at all times have the right of drainage into said canal: *Provided,* That the connections between the drains and the canal shall be made upon the plan to keep out mud and garbage.

5. That the use of the water-power of the canal shall be guaranteed forever to the actual owners of the property contiguous to said canal, its branches and dams, subject to such restrictions and regulations as may be made by the Secretary of the Department of the United States Government which may have charge of the said canal.

6. That the Government of the United States shall, before such surrender, discharge all the debts due by said canal company, and purchase the stock of said directors.

AN ACT making appropriations for the repair, preservation, and completion of certain public works on rivers and harbors, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

* * * * *

For completing the Louisville and Portland Canal, one hundred thousand dollars; and the Secretary of the Treasury is authorized and directed to assume, on behalf of the United States, the control and management of the said canal, in conformity with the terms of the joint resolution of the legislature of the State of Kentucky, approved March twenty-eighth, eighteen hundred and seventy-two, at such time and in such manner as, in his judgment, the interests of the United States, and the commerce thereof, may require; and the sum of money necessary to enable the Secretary of the Treasury to carry this provision into effect is hereby appropriated. *Provided,* That after the United States shall assume control of said canal the tolls thereon on vessels propelled by steam shall be reduced to twenty-five cents per ton, and on all other vessels in proportion.

* * * * *

Approved March 3, 1873.

AN ACT providing for the payment of the bonds of the Louisville and Portland Canal Company.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the appropriations made by the act approved March third, eighteen hundred and seventy-three, entitled "An act making appropriations for the repair, preservation, and completion of certain public works on rivers and harbors, and for other purposes," for the payment of the debts of the Louisville and Portland Canal Company, are hereby continued in full force, and are made permanently applicable to the payment of the debts of the said Louisville and Portland Canal Company, and so much as may be necessary shall be applied to the payment of the interest as it accrues and the principal of the outstanding bonds of said company as they mature: *Provided, however,* That the Secretary of the Treasury may purchase and pay for any of said bonds at the market price, not above par, whenever he deems it for the interest of the United States.

SEC. 2. That after thirty days from the passage of this act, the Secretary of War is hereby authorized and directed to take possession of the said Louisville and Portland Canal and all the property, real and personal, of said company as the property of the United States, as provided for by the act of the general assembly of the State of Kentucky, approved February 22, 1844, entitled "An act to amend an act entitled 'An act to amend the charter of the Louisville and Portland Canal Company,' approved January 21, 1842," conceding jurisdiction over said canal to the United States, subject, however, to the mortgage lien on said property in favor of the trustees under said mortgage, and the holders of the bonds issued under it; and the Secretary of the

Treasury is hereby authorized to pay the directors of said company for the stock held by them, which payment shall be made forthwith by the Secretary of the Treasury, being the sum of \$100 to each director, with interest thereon at 6 per centum per annum since the 9th day of February, 1864; and he is authorized and directed to cause a careful and full examination of all the receipts and disbursements of the said company to be made, and, to collect, and, if necessary, to sue for, any money due to or held for the said company by the directors of said company, or the trustees under said mortgage, or by any persons whatever. And said Secretary of the Treasury is hereby directed and empowered, immediately upon the passage of this act, to give public notice, in such manner as in his judgment will best effect the purpose, to all persons and corporations having debts of any nature against said Louisville and Portland Canal Company, except the bonded debt thereof, to present them to him on or before the first day of July, eighteen hundred and seventy-five, and any such debt not presented on or before said day shall be forever barred. And said Secretary is hereby directed and authorized to examine, audit, and in his discretion allow such debts or any of them, being hereby vested with any power necessary to that end; and he shall embrace his action in the premises in his succeeding annual report: *Provided, however,* That no sum of money shall be paid by the Secretary of the Treasury on account of any claim for either city or State taxes, assessed or to be hereafter assessed, against said company, or against the said canal property, or any of its appendages.

SEC. 3. That the said canal and property appertaining thereto shall be held for the common use and benefit of the people of the United States, free of all tolls and charges except such as are necessary to pay the current expenses of said canal and to keep the same in repair, and for the present year they shall be at the rate of 10 cents per ton capacity on vessels propelled by steam and 5 cents per ton on other vessels; and to ascertain what rates will pay current expenses after the present year, the Secretary of War shall, on the first Monday of January of each year, ascertain from the expenses of the previous year what tolls will probably pay the expenses of the current year, and shall fix and declare the rate of tolls thus ascertained to be charged for the current year; and until otherwise provided by law, the Secretary of War shall provide for the superintendence, management, and repair of said canal, and may apply the tolls so received, as far as may be necessary, to pay the current expenses of said canal and he shall, in his next annual report, set forth such receipts and expenditures, and the condition of said canal, with a view to such legislation as may be necessary for the superintendence and management thereof; but no expenditure nor contract for expenditure of money shall be made under the authority of this section in any one year to an amount greater than the amount which may be received during such year from the tolls on said canal.

SEC. 4. That if at any time it become necessary to enforce the lien of the mortgage upon said canal property for the benefit of the bond holders, it shall be lawful for the trustees named in said mortgage, or any other trustees who may be appointed in pursuance of the laws of Kentucky, to commence proceedings therein in any court having jurisdiction thereof, with notice to the United States as terre tenant pro forma, and serve process upon any officer of the United States who shall have the superintendence of said canal, whose duty it shall be to notify the Attorney-General of the United States of such service; whereupon said Attorney-General shall enter an appearance in said case and take all necessary steps to represent and defend the interests of the United States in such proceedings, so that the same may be conducted in the same manner and with the like effect as if the said Louisville and Portland Canal Company were still in existence as a corporation.

Approved, May 11, 1874.

LETTER OF MAJOR AMOS STICKNEY, CORPS OF ENGINEERS, TO THE MAYOR OF THE CITY OF LOUISVILLE, KENTUCKY, RELATING TO DRAINAGE.

UNITED STATES ENGINEER OFFICE,
Louisville, Ky., June 15, 1886.

SIR: I am directed by the Chief of Engineers, United States Army, to report upon a resolution of the National House of Representatives relating to the right of the city of Louisville to empty its drainage into the Louisville and Portland Canal.

The resolution is as follows:

“Whereas by the terms of the joint resolution of the legislature of the State of Kentucky, approved March 28, 1872, transferring the control and management of the Louisville and Portland Canal to the Government of the United States, it is expressly provided that the right of drainage into said canal is reserved to the city of Louisville; and whereas it is reported that the United States engineers in charge of said

canal have objected to the exercise of that right upon the part of the city of Louisville: Therefore,

"Resolved, That the Secretary of War be, and is hereby, directed to report to Congress whether in his judgment said right of drainage should be conceded to the city of Louisville, and, if not, the reason therefor, together with such information upon the subject as may to him seem proper in the premises."

In order that I may comply with my instructions, I would respectfully request to be informed upon the following points:

Upon what ground does the city claim the right of drainage into the canal?

What drainage does the city now empty, or in future might it contemplate emptying, either into the canal or at points that would make it liable to enter the canal?

What are the dimensions of the sewers or drains?

What area do they drain?

What is the nature of the drainage?

Are any provisions made to prevent mud and garbage from entering the canal?

Any other information upon the subject which you may present will be very acceptable.

Yours, very respectfully,

AMOS STICKNEY,
Major of Engineers.

Hon. P. B. REED,
Mayor of the City of Louisville, Ky.

LETTER FROM SAMUEL B. RANKIN, ASSISTANT CITY ENGINEER OF LOUISVILLE, KY.,
IN REGARD TO SEWAGE AND DRAINAGE.

OFFICE OF CITY ENGINEER, ROOM NO. 42, CITY HALL,
Louisville, Ky., June 19, 1886.

DEAR SIR: Your letter of 15th to the mayor has been referred to this department for answer. In the absence of Mr. Scowden, who will be absent from the city for some weeks, I would answer your questions as follows:

1st. The ground upon which the city claims the right of drainage into the canal is found in section 4 of the resolution (of March 28, 1872) referred to in section 5255, Title LXIII, p. 1021, Revised Statutes United States, March 3, 1873. This resolution is of the Kentucky legislature, and will be found in foot-notes to pages 224 and 225 in "Louisville City Code," 1884.

Answer 2. The sewers that now drain directly into the canal are the Seventeenth street, Twelfth street, and Tenth street sewers.

Those that empty into low ground between High avenue and the canal, and then drain west in ditches to about the mouth of the canal, are the Twenty-seventh street sewer (being the mouth of the Twenty-sixth street sewer) and the Twenty-first street sewer.

The sewers that empty into the river as far east as Fourth street, are the Fourth street, Fifth street, Sixth street, and Eighth street sewers.

Under the law, as I understand it, the general council of the city has the power to pass resolutions for constructing sewers in *any* streets leading to the canal between its head and mouth.

Answer 3. The dimensions of the sewers are:

Twenty-seventh street, 8 feet, circular.

Twenty-first street, 6 feet by 4 feet, egg-shaped.

Seventeenth street, 5½ feet by 3½ feet, egg-shaped.

Twelfth street, 5½ feet by 3½ feet, egg-shaped.

Tenth street, 3 feet, circular.

Eighth street, 3 feet, circular.

Sixth street, 3 feet, circular.

Fifth street, 3½ feet by 5½ feet, egg-shape.

Fourth street, 5 feet by 3 feet, egg-shape.

Answer 4. The area drained by the above-mentioned sewers is 1,109 acres.

Answer 5. The nature of the drainage is surface, house (from water-closets, &c.), and from factories of all kinds.

There is no provision made to prevent mud and garbage from entering the sewers, except the street catch-basins, which are trapped.

Hoping these are full answers to your questions,

I am, very respectfully,

SAM. B. RANKIN,
Assistant City Engineer.

AMOS STICKNEY,
Major of Engineers, U. S. A.

REPORT OF MR. C. L. CORNWELL, ASSISTANT SUPERINTENDENT UPON THE SEWAGE OF THE CITY OF LOUISVILLE, KY., IN CONNECTION WITH THE LOUISVILLE AND PORTLAND CANAL.

LOUISVILLE AND PORTLAND CANAL OFFICE, *June 24, 1886.*

SIR: In compliance with your order I have the honor to submit herewith the following report accompanied by a map showing the Louisville and Portland canal and the lands belonging to the United States, with the adjoining portion of the city of Louisville, Ky., showing the present system of sewage, now emptying into the canal proper, also a portion of the district that is drained into the Ohio River immediately above the head of the canal, which also finds its way into the same. This report must necessarily be brief and incomplete in much detail, owing to the very limited time allowed for its preparation. Had more time been given, careful analyses of the water entering the canal at the present time would have been made and compared with others taken from the Ohio River. Inclosed, however, will be found a report by Mr. I. G. Durbeck, a chemist of many years experience, who has tabulated some analyses made some years ago of water taken from the canal, also from the Ohio River at the same time, for comparison. The analysis show decidedly large quantities of organic matter carried in the water taken from the canal.

The Louisville and Portland Canal was built for the purpose of carrying vessels around the Falls of the Ohio River at Louisville, Ky. The present length of the canal is about $2\frac{1}{2}$ miles and is located immediately adjoining and partly through the city of Louisville, and lies between the city and the Ohio River. The line of the canal passes through low land, the level of which is considerably below the general level of the city.

At present seven main sewers with their numerous branches, and six private sewers or drains discharge directly into the canal, from Fourth street to the locks. At Preston street another sewer empties into the Ohio River, only a short distance above the head of the canal. The greater portion of the discharge from this sewer enters the canal during the months of low water, which extend from about the 1st of July until December, five months, three of which, July, August, and September, embrace the hottest portion of the season in this latitude. At this time of year the canal becomes very offensive, especially after heavy rains, which wash the streets and flush the sewers, carrying large quantities of filth and sediment into the canal. Fishes that chance to get into the canal soon die and can be seen floating on the surface in large numbers, and in a short time are in a decomposed state; they collect at the lock-gates, together with the bodies of small animals, where they become so offensive that the locks have to be opened to dispose of them.

The area drained by the sewers that now empty into the canal will exceed 600 acres, embracing the most populous portion of the city. This area is annually increasing as the sewers are extended. In time the canal will be converted into an immense, open sewer, unless some measures are adopted to entirely remove or at least lessen the present evil.

There can be no question but that the health of those employed on the canal, as well as all compelled to reside in the vicinity is at times seriously affected by the condition of the water in the canal.

It has been generally considered that the sewage and chemicals used at the paper mills, now entering the canal, is injurious to the life of gates and other structures, but as yet it has not been clearly demonstrated just what effect can be directly charged to it. The iron work on the gates is found to be badly corroded in a few years, especially those parts continuously submerged.

To determine, if possible, what injurious effect, if any, the water in the canal has upon boilers, I addressed letters to the different firms of this city owning steam-vessels that frequently use the canal. So far only one answer has been received, which is as follows:

"DEAR SIR: Yours of the 19th instant, inquiring as to injurious effect of water in canal on hulls and boilers, received. We have delayed answering until we could consult with some of the officers of the boats.

"The engineers say they cannot tell whether the water has any effect on the boilers or not, as they are in the canal so short a time in proportion to the time spent outside and only pump the water of the canal when compelled to do so. The same thing applies to the hulls, though, judging from the effect of the same sewage in a much more diluted state on our wharf-boat, which is exposed to it all the time, the canal water must be very injurious to hulls exposed to it any length of time.

"Very truly,

"W. W. HITE & Co.

"C. L. CORNWELL, Esq.,

"Assistant Superintendent Louisville and Portland Canal."

In conclusion, I desire to call your attention to the letters of Capt. A. Mackenzie, of June 4 and June 7, 1877; of Capt. A. N. Lee, Corps of Engineers, dated June 6, 1878;

and to the answer of Capt. A. Mackenzie, transmitting a copy of a letter addressed by the Chief of Engineers, General A. A. Humphreys, to the Honorable Secretary of War, in which he strongly opposes the attempt of the city authorities to discharge *their sewers* into the canal; also to the letter of Mr. Phil. J. Schopp, superintendent Louisville and Portland Canal, dated February 7, 1883, all of which strongly oppose the entrance of any additional sewers into the canal.

Very respectfully, your obedient servant,

C. L. CORNWELL,

Assistant Superintendent Louisville and Portland Canal.

Maj. AMOS STICKNEY,
Corps of Engineers, U. S. A.

REPORT OF I. G. DURBECK RELATING TO ANALYSES OF WATER IN LOUISVILLE AND PORTLAND CANAL.

LOUISVILLE AND PORTLAND CANAL OFFICE,

Louisville, Ky., June 24, 1886.

SIR: I have the honor to submit herewith the following report of analyses of canal and river water:

In 1875 I was ordered by General G. Weitzel, then in charge of the Louisville and Portland Canal and the improvement of the falls of the Ohio, to make a quantitative analysis of the canal water from time to time, so as to ascertain whether any substances were contained in it injurious to iron or wood used in construction of lock-gates or gate machinery. Having previously ascertained large amounts of organic matter in the canal water, I concluded to make at the same time an analyses of the river water for comparison of the organic matter contained in it.

January 17, 1876, 1,000 grams of canal and 1,000 grams of river water were taken.

The canal water yielded:

Organic matter, .071.

Earthy matter, .182.

Iron, .083.

Lime, .092.

Soda, .697.

One thousand grams of river water yielded:

Organic matter, .008.

Earthy matter, .105.

Iron, .009.

Lime, .010.

Traces of chloride of sodium.

On February 24, 1876, 1,000 grams of canal and 1,000 grams of river water were taken.

One thousand grams of canal water yielded:

Organic matter, .255.

Earthy matter, .856.

Iron, .193.

Lime, .088.

Soda, with traces of magnesia, .213.

One thousand grams river water, taken February 24, 1876, yielded:

Organic matter, .007.

On October 22, 1876, after a very long dry season, 1,000 grams of canal and 1,000 grams of river water were taken, twelve hours after a very heavy rain.

The canal water yielded:

Organic matter, .335.

Earthy matter, .197.

Iron, none.

Lime, .068.

Soda, .283.

One thousand grams of river water taken, October 22, 1876, yielded:

Organic matter, .007.

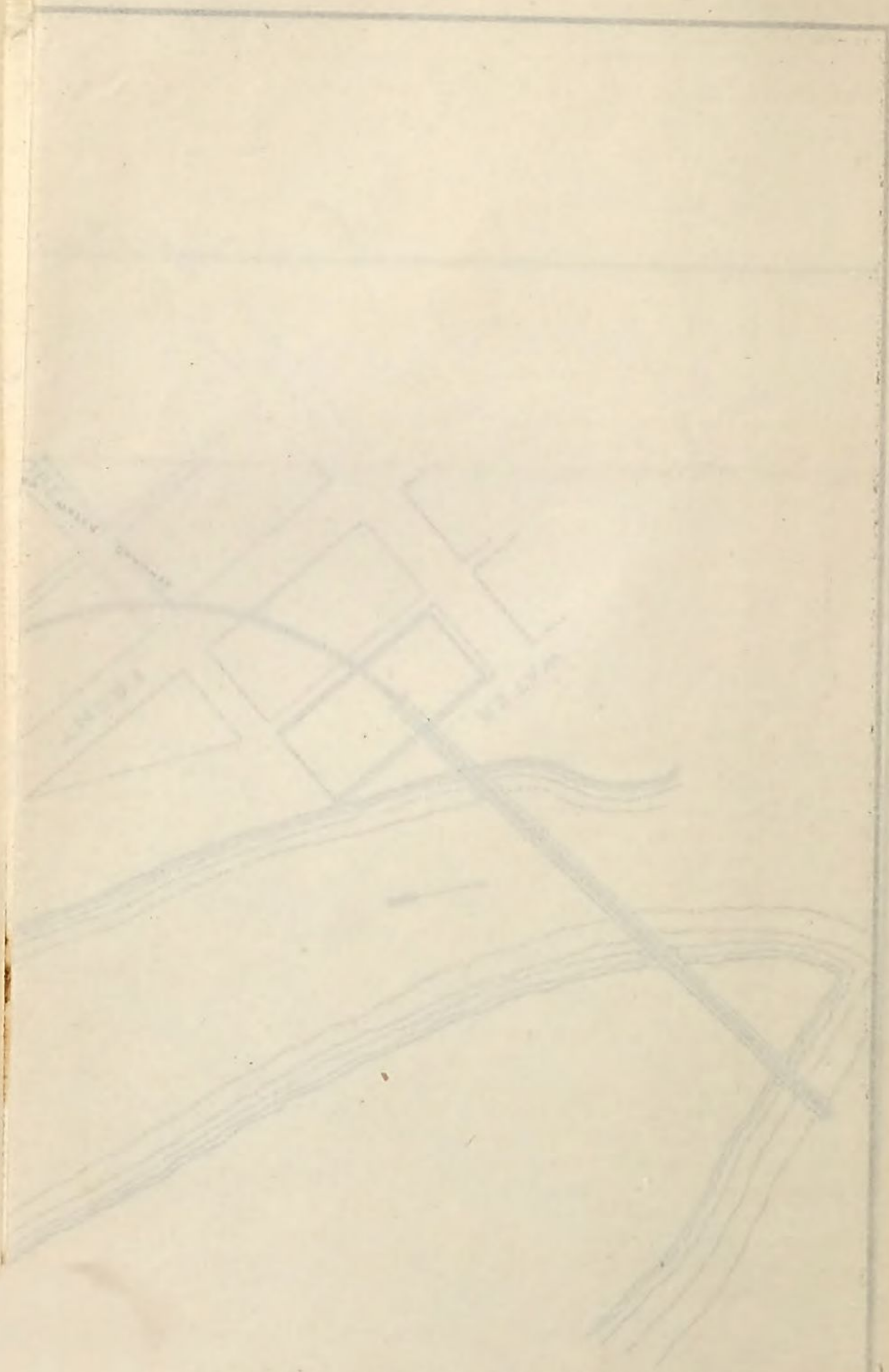
I have never found free acid in the canal water, but have found the water frequently to react alkaline on account of the large quantity of soda used in the paper-mill for cleaning rags, the refuse water emptying into the canal.

Very respectfully, your obedient servant,

I. G. DURBECK.

Maj. AMOS STICKNEY,
Corps of Engineers, U. S. A.

THE AMERICAN GRAPHIC CO. NY.



Small, faint handwritten text at the bottom left corner, possibly a signature or date, which is difficult to decipher due to fading.

FLOWAGE DAMAGE, FOX AND WISCONSIN RIVERS.

LETTER

FROM

THE ATTORNEY-GENERAL

IN RESPONSE TO

A resolution of the House calling for a report of the amounts due the Commissioners to ascertain the flowage damages caused by improvements on the Fox and Wisconsin Rivers.

JANUARY 5, 1857.—Referred to the Committee on Appropriations and ordered to be printed.

DEPARTMENT OF JUSTICE,
Washington, January 4, 1887.

SIR: In response to House resolution of the 15th ultimo, calling for a report of "the amounts due the the several Commissioners to ascertain flowage damages caused by the improvement of the Fox and Wisconsin Rivers, in the State of Wisconsin," &c., I have the honor to state that accounts of the below named Commissioners, for services performed and expenses incurred by them during the periods herein mentioned, are on file in this Department, which have been certified as correct and just by the special assistant United States attorney representing the United States in the proceedings to ascertain said damages, and from which it appears that the following amounts are due to them respectively:

Commissioner J. V. Swetting for services and expenses from April 11, 1882, to February 17, 1886, inclusive, \$1,173.25.

Commissioner J. C. Burdick for services and expenses during same period, \$1,440.95.

Commissioner J. C. Thompson for services and expenses from April 11, 1882, to October 6, 1885, inclusive, \$882.60.

Commissioner G. H. Buckstaff for services and expenses from November 2, 1885, to February, 1886, inclusive, \$332.60.

Commissioner E. M. Wadsworth for services and expenses from February 27, 1882, to June 12, 1885, inclusive, \$255.15.

Commissioner G. H. Read for services and expenses from February 27, 1882, to August 22, 1885, inclusive, \$357.30.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

FLOWAGE DAMAGE, FOX AND WISCONSIN RIVERS—SUPPLEMENTAL.

LETTER

FROM

THE ATTORNEY-GENERAL,

IN FURTHER RESPONSE TO

The House resolution calling for a report of the amounts due the several commissioners to ascertain flowage damages caused by the improvement of the Fox and Wisconsin Rivers.

JANUARY 21, 1887.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

DEPARTMENT OF JUSTICE,
Washington, January 20, 1887.

SIR: In further response to House resolution of the 15th ultimo, calling for a report of "the amounts due the several Commissioners to ascertain flowage damages caused by the improvement of the Fox and Wisconsin Rivers in the State of Wisconsin," &c., I have the honor to state that accounts of the below-named commissioners for services performed and expenses incurred by them, during the period herein mentioned, are on file in this Department, which have been certified as correct and just by the special assistant United States attorney representing the United States in the proceedings to ascertain said damages, and from which it appears that the following amounts are due to them respectively:

Commissioner J. C. Burdick for services and expenses from May 3 to December 31, 1886, inclusive.....	\$1,564 00
Commissioner J. V. Swetting for services and expenses during same period	1,564 00
Commissioner B. L. Cornish for services and expenses during same period	1,485 00
Commissioner G. H. Buckstaff for services and expenses during same period	1,485 00

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

LIGHT-HOUSE, BUSH'S BLUFF, VIRGINIA.

L E T T E R

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A communication from the Light-House Board asking an additional appropriation for substructure of light-house on Bush's Bluff, Virginia.

JANUARY 5, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 4, 1887.*

SIR: I have the honor to transmit herewith a letter of the Light-House Board of the 27th ultimo, from which it appears that by the act approved March 3, 1886, the sum of \$20,000 was appropriated for a light-house on Bush's Bluff, Elizabeth River, near Norfolk, Va., authority being given the Board to place it at such point in the vicinity of the bluff as it might deem proper; that the point selected was the most advantageous to the interests of commerce; has a bottom of such soft and yielding material that it will be necessary to use as a substructure an iron caisson filled with concrete; and that this change in plan will require an additional appropriation of \$10,000, which the Board asks may be made.

I have accordingly respectfully to transmit this communication so that action may be taken by Congress in the matter, if it appears wise to do so, agreeably to the desire of the Light-House Board.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, December 27, 1886.

SIR: By the act approved on 3d March, 1885, \$20,000 were appropriated for a light-house on Bush's Bluff, Elizabeth River, near Norfolk, Va., and by the act approved 4th August, 1886, authority was given to

place it at such point in the vicinity of the bluff as the Light-House Board might select.

The point selected, where the light would be most advantageous to commerce, has a bottom of such soft and yielding material that it will be necessary to use as a substructure an iron caisson filled with concrete. This change in plan, necessitated by the nature of the bottom, will require an additional appropriation of \$10,000, and the Board has the honor to ask that the proper steps may be taken to have the appropriation made.

Very respectfully,

S. C. ROWAN,
Vice-Admiral, U. S. N., Chairman.

The honorable the SECRETARY OF THE TREASURY.

○

NAVY HOSPITAL, WIDOW'S ISLAND, MAINE.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate by the Surgeon-General of the Navy of an appropriation to erect a permanent hospital for the Navy at Widow's Island, Maine.

JANUARY 5, 1887.—Referred to the Committee on Naval Affairs and ordered to be printed.

TREASURY DEPARTMENT, *January 4, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of letter of the Secretary of the Navy of the 21st ultimo, submitting an estimate by the Surgeon-General of the Navy for an appropriation of \$50,000 to erect a permanent hospital for the Navy on Widow's Island, Maine.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

NAVY DEPARTMENT,
Washington, December 21, 1886.

SIR: I have the honor to transmit herewith a copy of a communication, dated the 20th instant, addressed to me by the Chief of the Bureau of Medicine and Surgery, in which he asks that an application may be made to Congress for an appropriation of money for the purpose of commencing the erection of a permanent hospital for the Navy on Widow's Island, Maine, as soon as the opening of the spring weather permits. The recommendation of the Chief of the Bureau is approved by the Department, and I have to request that an estimate may be submitted to Congress for the purpose stated. The sum of \$50,000 will be needed to construct the hospital, outbuildings, and wharf, and to level and properly drain the land.

Very respectfully,

W. C. WHITNEY,
Secretary of the Navy.

Hon. DANIEL MANNING,
Secretary of the Treasury, Washington, D. C.

NAVY DEPARTMENT,
BUREAU OF MEDICINE AND SURGERY,
Washington, December 21, 1886.

SIR: In accordance with the considerations presented in my last report, I have recommended that Congress be asked to make an appropriation for money with which to commence the erection of a permanent hospital on Widow's Island, Maine, as soon as the opening of the spring weather permits.

Plans are now being prepared for the building, and the sum of \$50,000 will be needed to construct the hospital, outbuildings, and wharf, and to level and properly drain the land.

Very respectfully,

F. M. GUNNELL,
Surgeon-General, U. S. Navy.

Hon. W. C. WHITNEY,
Secretary of the Navy, Washington, D. C.

○

ADJUDICATIONS OF SUSPENDED LAND ENTRIES.

LETTER

FROM

THE ACTING SECRETARY OF THE INTERIOR,

TRANSMITTING

A list of adjudications of suspended entries of public lands for the year ended June 30, 1886.

JANUARY 5, 1887.—Referred to the Committee on the Public Lands and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
Washington, January 4, 1887.

SIR: Pursuant to the requirement of section 2452 of the Revised Statutes of the United States, I have the honor to submit herewith a list of adjudications of suspended entries of public lands for the year ended June 30, 1886, acted upon by the board provided for in section 2451 of said Statutes, and prepared and forwarded by the Commissioner of the General Land Office.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

H. Ex. 20—54

List of suspended entries of public lands adjudicated by the Board of Equitable Adjudication during the fiscal year ending June 30, 1886.

No.	Office.	Class.	Rule.	R. & R. No.	Names of parties.	Parts of section.	Section.	Town.	Range.	Cause of suspension.	Reason assigned for failure.
1	Montgomery, Ala.	Homestead	24	4420	Charles M. Thomas	NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	26	13	7	Proof not made in time	Ignorance.
2	do	do	24	4231	James M. Kerbey	N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	4	7	8	do	Do.
3	do	do	24	4288	Frank Faulk	SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	20	6	8	do	Do.
4	Gainesville, Fla.	do	24	4896	Wm. M. Dickinson	E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ and SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	29	6	8	do	Do.
5	Boonville, Mo.	do	24	3681	Silvanus S. James	Lots 5 and 8	5	3	29	do	Do.
6	Springfield, Mo.	do	24	4555	Patrick Loftus	W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	23	58	16	do	Do.
7	Jackson, Miss.	do	24	2952	Eveline Thompson	SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ W. $\frac{1}{2}$ of SE. $\frac{1}{4}$ and S. $\frac{1}{2}$ lot 2, and W. $\frac{1}{2}$ of lot 6.	25	34	17	do	Do.
8	do	do	24	2953	Amanda J. Mullican	E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	1	2	do	Do.
9	do	do	24	2954	Charles Martin	S. $\frac{1}{2}$ of NW. $\frac{1}{4}$	22	18	4	do	Do.
10	Sacramento, Cal.	do	24	2162	Catherine Gilder-sleeve	E. $\frac{1}{2}$ of lots 1 and 2, NW. $\frac{1}{4}$	6	11	8	do	Accident.
11	do	do	24	2158	George N. Williams	Lots 2 and 3, and SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$, and SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	6	7	11	do	Do.
12	Salt Lake City, Utah	do	24	3108	John Earle	NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ and S. $\frac{1}{2}$ of NE. $\frac{1}{4}$	31	8	11	do	Do.
13	do	do	24	3109	David Whitaker	SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$, 7, and NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	30	13	12	do	Do.
14	Wichita, Kans.	do	24	6673	James Bailey	NE. $\frac{1}{4}$	18	13	2	do	Do.
15	Bloomington, Nebr.	do	24	4620	Charles S. Palmer	NW. $\frac{1}{4}$	34	24	8	do	Do.
16	do	do	25	4677	William G. Ackley	NW. $\frac{1}{4}$	14	2	12	Residence not established in time.	Accident.
17	do	do	25	4797	John G. Fleischman	NE. $\frac{1}{4}$	2	3	25	do	Ignorance.
18	Little Rock, Ark.	do	25	3946	William A. Hollida-	NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$ and NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	5	18	do	Do.
19	do	do	24	3870	Rodney Crawford	NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	10	20	2	Proof not made in time	Do.
20	Camden, Ark.	do	24	3362	Wm. B. Chandler	S. $\frac{1}{2}$ of SE. $\frac{1}{4}$, 2, and N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	11	8	28	do	Do.
21	Benson, Minn.	do	24	6574	John Coyle	W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	120	39	do	Do.
22	do	do	24	6579	Patrick Conroy	N. $\frac{1}{2}$ of SE. $\frac{1}{4}$ and E. $\frac{1}{2}$ of SW. $\frac{1}{4}$	4	122	40	do	Do.
23	Gainesville, Fla.	do	24	4931	Franklin Pitts	E. $\frac{1}{2}$ of NE. $\frac{1}{4}$	5	14	19	do	Do.
24	do	do	24	4917	Ed. W. McDonald	SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ and W. $\frac{1}{2}$ of SW. $\frac{1}{4}$ and NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	32	14	24	do	Do.
25	Worthington, Minn.	do	24	6953	Charles E. Wood	NE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	5	15	24	do	Do.
26	Natchitoches, La.	do	24	1384	James M. Reed	E. $\frac{1}{2}$ of NE. $\frac{1}{4}$ and W. $\frac{1}{2}$ of NE. $\frac{1}{4}$	34	101	31	do	Do.
27	Marquette, Mich.	do	24	815	Carl Olson	W. $\frac{1}{2}$ of SW. $\frac{1}{4}$	26	11	11	do	Do.
28	Huntsville, Ala.	do	24	3827	Spencer D. Walker	SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	2	38	23	do	Do.
29	do	do	24	3837	Armstead Fletcher	E. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	6	12	do	Do.
30	do	do	24	8074	Henry C. Speegle	N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	12	3	4	do	Sickness.
31	do	do	24	3505	John H. Looser	W. $\frac{1}{2}$ of SE. $\frac{1}{4}$, 27, and N. $\frac{1}{2}$ of NE. $\frac{1}{4}$	20	11	4	do	Ignorance.
32	do	do	24	3713	Allen Pierce	S. $\frac{1}{2}$ of SW. $\frac{1}{4}$ and W. $\frac{1}{2}$ of SE. $\frac{1}{4}$	34	5	8	do	Poverty.
	do	do	24				29	2	3	do	Do.

No.	Locality	Acres	Owner	Section	County	Remarks	Notes
33	do	24, 25	Nancy J. Stanford	E. 1/4 of SW. 1/4, NW. 1/4 of SW. 1/4, and NE. 1/4 of SE. 1/4	Montgomery, Ala.	Proof not made in time and residence not in time.	Do.
34	do	24, 25	Martha J. Ronton	N. 1/4 of NE. 1/4	do	do	Ignorance.
35	do	24, 25	Elbert D. Cash	S. 1/4 of SW. 1/4	do	do	Do.
36	do	24	Nelson Robinson	SE. 1/4 of SW. 1/4, 22 N. 1/4 of NW. 1/4, and SW. 1/4 of NW. 1/4	do	do	Do.
37	do	24	Monroe A. Booker	N. 1/4 of SW. 1/4	do	Proof not made in time	Do.
38	do	24	Nat McCowey	N. 1/4 of NE. 1/4 and E. 1/4 of NW. 1/4	do	do	Do.
39	do	24	Susan A. Boyett	SE. 1/4 of NE. 1/4, NE. 1/4 of SE. 1/4, SW. 1/4 of NW. 1/4, and NW. 1/4 of SW. 1/4	do	do	Do.
40	do	24	Alexander Goyens	NE. 1/4 of NW. 1/4	do	do	Do.
41	Gainesville, Fla.	24	Peter Brown	W. 1/4 of SE. 1/4	do	do	Do.
42	do	24	Jackson Taylor	N. 1/4 of SE. 1/4, or lot 1, NW. 1/4 of SE. 1/4	do	Proof not made in time	Do.
43	do	24	Martha Fulcher	N. 1/4 of SW. 1/4	do	do	Sickness.
44	do	24	Sina Simons	SW. 1/4 of SW. 1/4	do	do	Ignorance.
45	do	24	Morris Pinkney	N. 1/4 of SW. 1/4	do	do	Do.
46	do	24	Caroline Poppell	E. 1/4 of SE. 1/4	do	do	Do.
47	do	24	Mary Bell	NW. 1/4 of NE. 1/4	do	do	Poverty.
48	do	24	Adolphus Marable	SE. 1/4	do	do	Sickness.
49	do	25	L. S. Scarborough	Lot No. 3, or W. 1/4 of SE. 1/4	do	Residence not established in time.	Ignorance.
50	Sacramento, Cal.	24	Charles Estey	SE. 1/4	do	Proof not made in time.	Do.
51	do	24	Anton Zantgraf	E. 1/4 of NE. 1/4	do	do	Do.
52	do	24	Jacob Zantgraf	E. 1/4 of SE. 1/4	do	do	Do.
53	do	24	Eric Olson	W. 1/4 of NW. 1/4	do	do	Do.
54	do	24	James Smith	SE. 1/4	do	do	Do.
55	do	24	J. W. Sumnerfield	SW. 1/4 of SE. 1/4	do	do	Do.
56	San Francisco, Cal.	24	John E. Hoppin	W. 1/4 of lots 5 and 8	do	do	Do.
57	Crookston, Minn.	25	Hugh W. Donaldson	NE. 1/4	do	Residence not established in time.	Do.
58	Saint Cloud, Minn.	24	Charles A. Geer	SW. 1/4 of NW. 1/4 and NW. 1/4 of SW. 1/4	do	Proof not made in time	Do.
59	do	24	Gust J. Monia	Lots 1 and 2	do	do	Ignorance.
60	do	25	Charles Coon	W. 1/4 of NW. 1/4	do	Residence not established in time.	Accident.
61	do	24	Ole Nelson	W. 1/4 of NE. 1/4 and lots 3 and 4	do	Proof not made in time	Do.
62	Niobrara, Nebr.	24	Samuel G. Adams	S. 1/4 of NE. 1/4 and N. 1/4 of SE. 1/4	do	do	Do.
63	do	24	Thomas F. Marrow	N. 1/4 of NW. 1/4 and SE. 1/4 of NW. 1/4 and 1/4 of NE. 1/4	do	do	Do.
64	do	24	Patrick L. Kelley	S. 1/4 of SW. 1/4 and SW. 1/4 of SE. 1/4	do	do	Do.
65	do	25	Nelson M. Adams	NE. 1/4	do	Residence not established in time.	Do.
66	Neligh, Nebr.	25	Charlotte F. White-man	SW. 1/4	do	do	Do.
67	Grand Island, Nebr.	25	Jacob Garden	SW. 1/4	do	do	Do.
68	Bloomington, Nebr.	24	Duncan McCall	W. 1/4 of NE. 1/4 and E. 1/4 of NW. 1/4	do	Proof not made in time	Ignorance.
69	Wausau, Wis.	24	Mah-he Skar Kar	S. 1/4 of SE. 1/4	do	do	Accident.
70	Roseburg, Oreg.	24	Henry Deboy	S. 1/4 of SE. 1/4	do	do	Ignorance.

List of suspended entries of public lands adjudicated by the Board of Equitable Adjudication, &c.—Continued.

No.	Office.	Class.	Rule.	R. & R. No.	Names of parties.	Parts of section.	Section.	Town.	Range.	Cause of suspension.	Reason assigned for failure.
71	Fargo, Dak.	\$12,206 to cash surveyor's general's certificate.	20, 25	25, 226	Hans O. Nordrig	SE. $\frac{1}{4}$	8	132	54	Did not become a citizen (declare his intention to become) until after date of entry, and residence not established within the statutory period.	
72	Huron, Dak	Cash	20	11853	John D. Welsh	NW. $\frac{1}{4}$	28	111	63	Had not declared his intention to become a citizen at date of entry.	
73	Aberdeen, Dak	do	20	4475	Ole Oleson	SW. $\frac{1}{4}$	35	124	66	do	
74	Dardanelle, Ark	Homestead	19	3130	James O. Brown	NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	8	4	22	Conflict with homestead entry No. 9932, cancelled May 4, 1885.	
75	Huntsville, Ala.	do	24	3868	Malinda A. Hester	N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	6	12	Proof not made in time	Ignorance.
76	do	do	24, 25	3854	Edward Hawkins	W. $\frac{1}{2}$ of NE. $\frac{1}{4}$ and N. $\frac{1}{2}$ of NW. $\frac{1}{4}$	34	13	14	Proof not made in time and residence not in time.	Do.
77	Saint Cloud, Minn.	do	25	5787	Charles C. Wheeler	Lots 2, 3, 4, and 5	10	45	28	Residence not established in time.	Sickness.
78	Worthington, Minn.	do	24	6983	John T. Green	W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	22	101	42	Proof not made in time	Ignorance.
79	do	do	24	6952	Tollef O. Opeata	SW. $\frac{1}{4}$	22	103	44	do	Do.
80	Tracy, Minn.	do	24	5461	Baard Knudson	SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$ and lots 2 and 3.	24	108	41	do	Do.
81	do	do	24	5457	Daniel Duggan	E. $\frac{1}{2}$ of SE. $\frac{1}{4}$	20	106	44	do	Accident.
82	Redwood Falls, Minn.	do	25	3206	Andrew Neilson	NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	28	112	39	Residence not established in time.	Do.
83	Gainesville, Fla	do	25	5033	Truman K. Snyder	E. $\frac{1}{2}$ of NE. $\frac{1}{4}$, sec. 5, and W. $\frac{1}{2}$ of NW. $\frac{1}{4}$	4	21	26	do	Do.
84	do	do	24	5028	John Starling	SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	32	12	18	Proof not made in time	Ignorance.
85	Ironton, Mo	do	24	2598	Isaac A. Jones	W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	27	10	do	Do.
86	North Platte, Nebr.	do	25	835	Amos M. Westfall	SE. $\frac{1}{4}$	28	7	21	Residence not established in time.	Do.
87	Neligh, Nebr.	do	25	4850	Albert Edson	Lots 3 and 4, sec. 30, and lots 1 and 2.	31	25	11	do	Do.
88	do	do	25	8123	Abner G. Winn	SW. $\frac{1}{4}$	4	25	12	do	Do.
89	Hays City, Kans.	do	24	1360	William J. Haddock	W. $\frac{1}{4}$ of NE. $\frac{1}{4}$	2	12	19	Proof not made in time	Do.
90	do	do	24	1168	Herman Robben	W. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	14	16	do	Do.
91	Salina, Kans.	do	24	18897	Amy Harrell	S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	12	7	do	Do.
92	Vancouver, Wash.	do	24	2330	Rich'd S. Baverstock	S. $\frac{1}{4}$ of NE. $\frac{1}{4}$ and N. $\frac{1}{2}$ of SE. $\frac{1}{4}$	6	4	15	do	Do.
93	Salt Lake City, Utah.	do	24	3496	James R. Bryant	SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	5	5	1	do	Do.
94	do	do	24	3177	Hyrum Shelton	SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	3	4	do	Sickness.
95	do	do	24	2844	Richard Jones	NW. $\frac{1}{4}$	11	4	5	do	Ignorance.
96	Reed City, Mich.	do	25	5694	William H. Salter	S. $\frac{1}{2}$ of SW. $\frac{1}{4}$	18	9	14	Residence not established in time.	Accident.
97	Detroit, Mich.	do	24	257	William B. Coffy	SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	14	11	12	Proof not made in time	Ignorance.

98	Redwood Falls, Minn.	do	Special.	2179	James Barkey	W. 1/4 of SW. 1/4	22	114	35	See Commissioner's letter with the papers in the case.	Ignorance.
99	Bloomington, Nebr.	do	24, 25	1954	Franz Eusehon	SW. 1/4	10	4	10	Proof not made in time and residence not in time.	Do.
100	do	do	24, 25	4812	Nels Westblom	SE. 1/4	22	5	18	Residence not in time.	Do.
101	do	do	24, 25	1018	George W. Horn	E. 1/4 of SW. 1/4 and W. 1/4 of SE. 1/4	7	2	20	do	Do.
102	do	do	24, 25	5309	Samuel S. Smith	SW. 1/4	34	4	14	do	Do.
103	Niobrara, Nebr.	do	24, 25	2509	Paul H. Nelson	NE. 1/4	17	28	4	do	Sickness.
104	Huntsville, Ala.	do	24	3853	Amanda Clark	NE. 1/4 of NE. 1/4	20	11	14	Proof not made in time.	Ignorance.
105	do	do	24	3861	Wm. C. Copeland	SW. 1/4 of SE. 1/4	26	9	8	do	Do.
106	Natchitoches, La.	do	24	1370	Eroy R. Youngblood	S. 1/4 of NW. 1/4	26	19	8	do	Sickness.
107	New Orleans, La.	do	24	4563	Sebastian Chamont	Lots 1, 2, and 4, sec. 6, and all of NW. 1/4 of NW. 1/4	7	6	2	do	Ignorance.
108	Little Rock, Ark.	do	24	4007	Matilda Riggs	S. 1/4 of SE. 1/4, NW. 1/4 of SE. 1/4, and SE. 1/4 of SW. 1/4	23	5	15	do	Sickness.
109	Harrison, Ark.	do	24	4511	J. L. Douglass	W. 1/4 of SE. 1/4 and S. 1/4 of SW. 1/4	21	14	23	do	Do.
110	do	do	24	4504	James W. Wright	W. 1/4 of SE. 1/4 and S. 1/4 of SW. 1/4	2	17	14	do	Ignorance.
111	Hays City, Kans.	do	24	1219	Anson Holzmaister	S. 1/4 of SE. 1/4	12	16	17	do	Do.
112	do	do	24	1297	Jacob Smith	NW. 1/4	15	19	24	do	Accident.
113	do	do	24	989	David Hackett	NW. 1/4	6	18	18	do	Mistake.
114	do	do	25	1879	John Graden	E. 1/4 of NE. 1/4 and E. 1/4 of SE. 1/4	26	17	21	Residence not established in time.	Sickness.
115	Redwood Falls, Minn.	do	24	3253	Theo. Halvorson	E. 1/4 of NW. 1/4	28	112	43	Proof not made in time.	Ignorance.
116	Taylor's Falls, Minn.	do	24	2027	R. D. Crethers	N. 1/4 of SW. 1/4	2	34	27	do	Sickness.
117	Saint Cloud, Minn.	do	21	5582	Mads Larsen	S. 1/4 of NW. 1/4	22	128	30	do	Ignorance.
118	Reed City, Mich.	do	25	5426	David J. Moose	N. 1/4 of NE. 1/4	14	35	4	Residence not established in time.	Accident.
119	Gainesville, Fla.	do	24	5070	Dennis Hughes	N. 1/4 of NE. 1/4	8	3	13	Proof not made in time.	Ignorance.
120	do	do	24, 25	5105	Heirs of Oliver Bellett (deceased).	N. 1/4 of NW. 1/4	6	12	7	Proof not made in time and residence not in time.	Do.
121	Eau Claire, Wis.	do	25	3254	Johan Hanson	W. 1/4 of NE. 1/4 and E. 1/4 of NW. 1/4	24	31	11	do	Do.
122	Aberdeen, Dak.	Homestead 415 to cash No. 5228.	20	H.D. 415 C. 5228	Phillip Schrempf	NW. 1/4	15	126	65	Declaration to become a citizen made after original entry.	
123	Salt Lake City, Utah	Homestead.	Special.	3199	Christian P. Willingbeck	SW. 1/4	16	1	1	See Secretary's letter with the papers in the case.	
124	Benson, Minn.	do	24	6627	Bridget McGeary	W. 1/4 of SW. 1/4	14	121	41	Proof not made in time.	Ignorance.
125	do	do	24	6605	Firzah Perkins	NE. 1/4 of NW. 1/4	6	120	27	do	Sickness.
126	do	do	25	6608	Asbyom O. Nasset	SE. 1/4	17	123	46	Residence not established in time.	Accident.
127	Redwood Falls, Minn.	do	25	1272	Adam Alexander	SE. 1/4	4	112	38	do	Do.
128	Worthington, Minn.	do	24, 25	10561	Peter Matchel	NE. 1/4 of SE. 1/4	28	102	5	Proof not in time and residence not in time.	Ignorance.
129	do	do	24	7011	Timothy Crowley	NW. 1/4 of SW. 1/4	22	105	40	Proof not made in time.	Do.
130	Tracy, Minn.	do	24	5485	John B. Zeng	NE. 1/4	6	110	38	do	Do.
131	Winnebago City, Minn.	do	25	980	John Robinson	SW. 1/4	29	105	29	Residence not established in time.	Accident.
132	Little Rock, Ark.	do	24	4115	Aaron Carlton	NE. 1/4	8	12	9	Proof not made in time.	Ignorance.
133	Harrison, Ark.	do	24	4497	Jasper L. Brown	N. 1/4 of NE. 1/4, 6, 7, 20, SE. 1/4 of SE. 1/4	31	21	28	do	Do.
134	do	do	24	4517	Henry E. Baker	N. 1/4 of NW. 1/4 and SE. 1/4 of NW. 1/4	30	19	10	do	Do.

List of suspended entries of public lands adjudicated by the Board of Equitable Adjudication, &c.—Continued.

No.	Office.	Class.	Rule.	R. & R. No.	Names of parties.	Parts of section.	Section.	Town.	Range.	Cause of suspension.	Reason assigned for failure.
135	Huntsville, Ark.	Homestead.	24	1218	Delas Burnside	SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ and S. $\frac{1}{4}$ of SE. $\frac{1}{4}$ and NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$.	30	1	10	Proof not made in time	Accident.
136	Montgomery, Ala.	do	24	4476	John W. Kidd	SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	25	1	9	do	Do.
137	do	do	25	4710	S. Kelley	NW. $\frac{1}{4}$	23	9	5	Residence not established in time.	Do.
138	Natchitoches, La.	do	24	1279	Ralph Walker	S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	22	11	14	Proof not made in time	Ignorance.
139	do	do	24, 25	876	George Fox	W. $\frac{1}{4}$ of NE. $\frac{1}{4}$	22	7	10	do	Do.
140	Oregon City, Ore.	do	24	1927	James A. Brooks	SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ and lot 1.	28	1	4	do	Sickness.
141	Marquette, Mich.	do	24	579	Joseph Nolden	NW. $\frac{1}{4}$ of NNW. $\frac{1}{4}$ and NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$.	14	38	23	do	Ignorance.
142	Walla Walla, W. T.	do	24	1084	Nicholas Fleichinger	NW. $\frac{1}{4}$	22	10	43	Residence not established in time.	Do.
143	Hays City, Kans.	do	25	1369	Benjamin Holroyd	SE. $\frac{1}{4}$	15	17	22	Proof not made in time and residence not in time.	Do.
144	Junction City, Kans.	do	24, 25	1614	Fred Heiserman	W. $\frac{1}{4}$ of SW. $\frac{1}{4}$	18	13	7	do	Do.
145	Yankton, Dak.	do	24	2878	Abraham Boese	NE. $\frac{1}{4}$	8	93	61	do	Do.
146	do	do	24	3049	James Haley	NW. $\frac{1}{4}$	2	92	61	do	Do.
147	Des Moines, Iowa	do	24	928	Jacob Bigleman	W. $\frac{1}{4}$ of NW. $\frac{1}{4}$	30	97	30	do	Do.
148	Natchitoches, La.	Cash	13	18117	Christer Chaplin	SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	8	8	9	Land not subject to private entry, having been withdrawn to aid in the construction of the New Orleans, Baton Rouge and Vicksburg Railroad, and not restored to market; \$2.50 paid on the entry per acre.	Do.
149	Harrison, Ark.	do	24	4205	Thomas Ellis	E. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	18	27	Proof not made in time	Ignorance.
150	do	do	24	4443	William Tweedy	SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	4	13	26	do	Do.
151	do	do	24	4450	Elisha B. Johnson	SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$ and N. $\frac{1}{4}$ of SW. $\frac{1}{4}$.	22	15	8	do	Do.
152	do	do	24	4491	Nathan H. Cox	SW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	2	15	26	do	Do.
153	do	do	24	4490	George W. Berry	NE. $\frac{1}{4}$, SE. $\frac{1}{4}$, 6, and NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	5	17	11	do	Do.
154	do	do	24	4486	Wm. H. Bridgers	E. $\frac{1}{4}$ of SW. $\frac{1}{4}$, 25, and E. $\frac{1}{4}$ of NW. $\frac{1}{4}$	36	13	31	do	Do.
155	do	do	24	4481	Martin J. Wilkins	S. $\frac{1}{4}$ of NW. $\frac{1}{4}$	27	20	33	do	Do.
156	do	do	24	4473	Susan A. Saults	NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	9	20	25	do	Do.
157	do	do	24	4467	Edward Hawkins	SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$ and E. $\frac{1}{4}$ of NW. $\frac{1}{4}$ and NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$.	20	14	26	do	Do.
158	do	do	24	4465	Alfred Kurnard	NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	29	14	26	do	Do.
159	do	do	24	4464	Joshua Collins	SE. $\frac{1}{4}$ of SW. $\frac{1}{4}$	26	17	8	do	Do.
160	do	do	24	4452	Peter L. Mondier	W. $\frac{1}{4}$ of NW. $\frac{1}{4}$ and NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$.	34	18	31	do	Accident.
161	do	do	24, 25	4444	Elizabeth Gifford	SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$, NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$ and E. $\frac{1}{4}$ of SW. $\frac{1}{4}$	3	17	31	do	Do.
	do	do				S. $\frac{1}{4}$ of SW. $\frac{1}{4}$	30	20	32	do	Do.
	do	do					30	20	32	Proof not made in time and residence not in time.	Do.

Page	County	Location	Section	Acres	Owner	Remarks	Notes
162	do	do	do	25	William Fielding	SE. 1/4 of SE. 1/4	Residence not established in time.
163	do	do	do	25	James M. Stone	S. 1/4 of SW. 1/4	Do.
164	Camden, Ark.	do	do	24	George V. Bates	SE. 1/4 of SE. 1/4	Do.
165	do	do	do	24	Jonathan Crow	N. 1/4 of NE. 1/4	Do.
166	do	do	do	24	William J. Goodson	NE. 1/4 of NW. 1/4	Do.
167	do	do	do	24	Andrew E. Sanders	E. 1/4 of SW. 1/4 and W. 1/4 of SE. 1/4	Do.
168	do	do	do	24	Silas R. Wood	S. 1/4 of NW. 1/4 and NW. 1/4 of SW. 1/4	Do.
169	do	do	do	24	James H. Low	W. 1/4 of NW. 1/4 and E. 1/4 of NE. 1/4	Do.
170	do	do	do	24	Mary James	N. 1/4 of SE. 1/4 and S. 1/4 of NE. 1/4	Do.
171	do	do	do	24	Ned L. May	N. 1/4 of SE. 1/4 and SE. 1/4 of NE. 1/4	Do.
172	do	do	do	24	Daniel W. Buir	NW. 1/4 of SW. 1/4	Do.
173	Washington City, Indiana land.	do	do	24	James Brady	W. 1/4 of SW. 1/4	Do.
174	Carson City, Nev.	do	do	Special	John Byrne	SW. 1/4 of SW. 1/4	Do.
175	Marquette, Mich.	Location	do	Special	Alex. McKinnon	SE. 1/4 of SW. 1/4 and SW. 1/4 of SE. 1/4 and NW. 1/4 of NE. 1/4 and NE. 1/4 of NW. 1/4	See Commissioner's letter with the papers.
176	do	do	do	do	D. C. McKinnon	SW. 1/4 of SW. 1/4 and SE. 1/4 of SE. 1/4	Supreme Court scrip. See Commissioner's letter with the papers.
177	do	do	Wt. Location	do	G. M. Wakefield	NE. 1/4	See Commissioner's letter with the papers in the case.
178	do	do	do	do	do	NW. 1/4	do
179	do	Cash	do	do	Chas. L. Anderson	SW. 1/4	do
180	do	do	do	do	Edward Breitring	E. 1/4 of SW. 1/4 and SE. 1/4 and NW. 1/4 of SE. 1/4	do
181	do	do	do	do	Edward Breitring	SW. 1/4 of NW. 1/4 and lots 3 and 4	do
182	do	do	do	do	do	Lot 4	do
183	do	do	do	do	James F. Joy and John M. Loneyear.	NE. 1/4 and NW. 1/4 of SE. 1/4	do
184	East Saginaw,	do	do	do	Moore Kerr and J. J. Rupp.	SW. 1/4 of SW. 1/4, sec. 20 and S. 1/4 of SE. 1/4	do
185	do	do	do	do	David Preston	W. 1/4 of SE. 1/4 and SW. 1/4 of NE. 1/4 NE. 1/4 of NW. 1/4, 12 and SE. 1/4 of NW. 1/4 and NE. 1/4 of SW. 1/4	do
186	do	do	do	do	John F. Boynton	SE. 1/4 of NE. 1/4	do
187	do	do	do	do	do	SW. 1/4 of SE. 1/4	do
188	do	do	do	do	do	SW. 1/4 of NE. 1/4	do
189	do	do	do	do	Niel Michelson	NE. 1/4 of NE. 1/4	do
190	do	do	do	do	Charles L. Ortman	NE. 1/4 of SE. 1/4, 22, and NE. 1/4 of SW. 1/4	do
191	do	do	do	do	John J. Rupp and Moore Kerr.	NW. 1/4 of NE. 1/4, 4, and NW. 1/4 of NE. 1/4	do
192	do	do	do	do	John J. Rupp	NW. 1/4 of SE. 1/4	do
193	do	do	do	do	Sarah G. Begle	NE. 1/4 of NE. 1/4	do
194	do	do	do	do	John J. Rupp and Moore Kerr.	SW. 1/4 of SE. 1/4 and SE. 1/4 of SW. 1/4	do
195	do	do	do	do	do	NW. 1/4 of NW. 1/4	do

List of suspended entries of public lands adjudicated by the Board of Equitable Adjudication, &c.—Continued.

No.	Office.	Class.	Rufe.	R. & R. No.	Names of parties.	Parts of section.	Section.	Town.	Range.	Cause of suspension.	Reason as signed for failure.
196	East Saginaw	Cash.	Special.	12612	Sarah G. Begle	SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	12	18	2	{ See Commissioner's letter with the papers in the case.	
197	do	do	do	12652	Lovenia E. Pease	SE. $\frac{1}{4}$ of SE. $\frac{1}{4}$	36	19	2		
198	do	do	do	12885	William H. Wilson and Farwell A. Wilson.	SW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	24	18	1		
						NE. $\frac{1}{4}$ of SW. $\frac{1}{4}$, 22, SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	22	2		
						S. $\frac{1}{4}$ of NW. $\frac{1}{4}$, 26, and SW. $\frac{1}{4}$ of NE. $\frac{1}{4}$.	30				
199	do	do	do	12887	William H. and Farwell A. Wilson.	NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	4	21	2	do	
200	do	do	do	12889	do	SE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	21	1	do	
201	do	do	do	12890	do	S. $\frac{1}{4}$ of NE. $\frac{1}{4}$	36	21	2	do	
202	do	do	do	12892	do	NE. $\frac{1}{4}$ of NE. $\frac{1}{4}$	6	22	2	do	
203	do	do	do	12893	do	NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	32	23	2	do	
204	do	do	do	12896	do	NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	34	24	2	do	
205	Montgomery, Ala.	Cash.	do	18673	Hugh B. Callen	NW. $\frac{1}{4}$ of SW. $\frac{1}{4}$	20	23	14	Submitted under Secretary's decision in Pecard <i>vs.</i> Camens, 4 L. D., 152, September 17, 1885.	
206	Reed City, Mich.	do	do	22586	Andrew Stewart	NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	12	31	3	{ See Commissioner's letter with the papers.	
207	Detroit, Mich.	do	do	36429	John Ruff and Moore Kerr.	And NW. $\frac{1}{4}$ of NE. $\frac{1}{4}$	14	31	3		
						NW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	32	29	2		
208	E. Saginaw, Mich.	do	do	12620	John J. Ruff and Addison P. Brewer	NW. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	21	1	{ do	
209	do	do	do	12704	do	And SW. $\frac{1}{4}$ of SE. $\frac{1}{4}$	24	21	2		
210	do	do	do	12659	John G. Owen	NE. $\frac{1}{4}$ of NW. $\frac{1}{4}$	6	21	1		
						Lot No. 1	4	24	2	do	

Suspended pre-emption cases submitted to the Board of Equitable Adjudication and confirmed by the Board during the fiscal year ending June 30, 1886.

No.	States.	Class.	Rule.	R. & R. No.	Names of parties.	Parts of section.	Section.	Township.	Range.	Cause of suspension.
243 689	Del Norte, Colo. Leadville, Colo.	Pre-emption do	1 1	..... .....	James R. Foster: John McDonald.	W. $\frac{1}{4}$ NE. $\frac{1}{4}$ N. $\frac{1}{4}$, SW. $\frac{1}{4}$, SW. NW. $\frac{1}{4}$ SE. NE.	15 31	46 n 10 s	9 e 80 w	Testimony of only one witness furnished. Jurat to affidavit not completed; supplemental pre-emption affidavit made before register of another district. Certificate of citizenship issued subsequent to entry.
1075	Helena, Mont.	do	1	.....	John Shea.	S. $\frac{1}{4}$, NE. $\frac{1}{4}$, and lots 1 and 2.	5	14 n	15 e	Certificate of citizenship issued subsequent to entry.
5297	Watertown, Dak.	do	20	.....	Isaiah Bingham	SE. $\frac{1}{4}$	17	126 n	58 w	Declaration of intention to become citizen of the United States subsequent to date of entry.
1031 835	Huron, Dak Aurora, Nev.	do A. C. S. location.	20 Special	 28	William Manse. John W. Martin.	SE. $\frac{1}{4}$ E. $\frac{1}{4}$ of lots 2, 3, 4, and 5 of NE. $\frac{1}{4}$	7 1	117 n 13 s	64 e 34 e	Do. Land within Camp Independence Military Reservation; residence surrendered under act of 1884.
73	Del Norte, Colo.	Pre-emption	1	.....	James E. McNaughton.	SW. NE. $\frac{1}{4}$ S. $\frac{1}{4}$ NW. $\frac{1}{4}$ NW. $\frac{1}{4}$ SW. $\frac{1}{4}$.	11	41 n	6 e	Proof defective and cannot be cured, as party cannot be found; land in hands third party.
59410	Marquette, Mich.	M. B. L. Wt.	Special	5896	George M. Wakefield.	Lots 1, 2, 3, and 4 SW. NW.	28	43 n	34 w	Lack of restoration notice.
B 843	do	S. C. S. location.	do	685	Joseph Pecard.	SE. of SE. $\frac{1}{4}$	34	43 n	35 w	Do.
B 843	do	do	do	686	do	NE. SW. $\frac{1}{4}$, W. $\frac{1}{4}$, NW. $\frac{1}{4}$	2	42 n	35 w	Do.
114362	do	M. B. L. Wt.	do	5781	John D. Ross.	NE. $\frac{1}{4}$	36	43 n	35 w	Do.
B 614	do	S. C. S. location.	do	729	do	N. $\frac{1}{4}$ NE.	26	43 n	35 w	Do.
B 615	do	do	do	728	do	SW. NE. $\frac{1}{4}$, SE. SW. $\frac{1}{4}$	26	43 n	35 w	Do.
12836	do	Pre-emption	do	.....	Thomas Irvine.	NW. $\frac{1}{4}$	24	46 n	24 w	Abandoned a residence on land of his own to make entry.

List of suspended mineral entries submitted to the Board of Equitable Adjudication and confirmed by the Board during the fiscal year ending June 30, 1887.

No.	States.	Class.	Rule.	R. & R. No.	Names of parties.	Parts of section.	Cause of suspension.
1	Hailey, Idaho	Mineral	Special	5	Henry Guyer	Lot No. 40 on unsurveyed land	Notice not posted in land office for the full statutory period.
2	do	do	do	6	do	Lot No. 39 on unsurveyed land	Do.
3	Helena, Mont	do	do	1011	Charles S. Warren	Lot No. 354 on unsurveyed land	Notice not posted on the claim for the full statutory period.
4	Hailey, Idaho	do	do	18	Alturus Consolidated Mining Company.	Lot No. 37 on unsurveyed land	Notice not posted in land office for the full statutory period.
5	do	do	do	10	Henry Guyer	Lot No. 50 on unsurveyed land	Do.
6	do	do	do	11	do	Lot No. 51 on unsurveyed land	Do.
7	do	do	do	13	Walter P. Jenny <i>et al</i>	Lot No. 56 on unsurveyed land	Do.
8	do	do	do	14	do	Lot No. 55 on unsurveyed land	Do.
9	Helena, Mont	do	do	1056	Robert McMinn	Lot No. 303 on unsurveyed land	Notice not posted on the claim for the full statutory period.
10	Central City, Colo.	do	do	956	Sylvester Nichols <i>et al</i>	Lot No. 486 on unsurveyed land	Do.

Very respectfully,

WM. A. J. SPARKS, Commissioner.

BUREAU OF ENGRAVING AND PRINTING SEWER.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A letter from the Chief of the Bureau of Engraving and Printing in relation to an increase in the appropriation required for construction of a sewer from the building of that Bureau.

JANUARY 5, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 4, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of letter of the Chief of the Bureau of Engraving and Printing, of the 22d ultimo, and inclosures, in relation to the insufficiency of the appropriation made by the sundry civil act of August 4, 1886 (24 Stat., 224), for the construction of a sewer from the building for said Bureau to connect with the city sewer.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
BUREAU OF ENGRAVING AND PRINTING,
December 22, 1886.

SIR: I have the honor to transmit herewith a copy of a letter addressed to me by the Engineer Commissioner of the District of Columbia on the 18th instant, informing me that the \$1,200 appropriated in the sundry civil bill for 1887 for the construction of a new sewer from the south side of the Bureau of Engraving and Printing to the corner of Fourteenth and D streets, to connect at that point with the city sewer, is insufficient for the purpose, and calling attention to the desirability of providing for the proper drainage of the building occupied by this Bureau, as shown in a tracing inclosed by him, and also herewith transmitted, by which the sewage of the Quartermaster's corral can also be intercepted, kept from the reclaimed flats, and delivered

into the river below the Long Bridge. The Commissioner accordingly suggests that an appropriation of \$2,500 be secured from Congress to construct the sewer in the manner proposed.

The line of construction suggested by the Commissioner is preferred by this Bureau to that originally contemplated, as it avoids the numerous angles of the original plan and obviates the necessity for making any excavation within the grounds of the Bureau.

As it appears that such a sewer will also furnish necessary drainage to the buildings belonging to the Quartermaster's Department, in square 232, I have the honor to recommend that application be made to Congress for an appropriation of \$2,500, in accordance with the Commissioner's suggestion. As bearing upon the same subject, I also transmit herewith a copy of my letter of July 13, 1886, addressed to the Acting Secretary of the Treasury.

The sewage of this Bureau is now carried across the reclaimed flats in a temporary wooden conduit and discharged into the river at a point within the proposed flushing basin. As this arrangement is only a temporary make-shift, and as it is understood that the engineer's plans do not permit of a discharge of sewage into the flushing basin, the necessity for making some provision for a permanent sewer for this building which shall discharge at a point below the Long Bridge is obvious.

Very respectfully,

E. O. GRAVES,
Chief of Bureau.

Hon. DANIEL MANNING,
Secretary of the Treasury.

OFFICE OF THE ENGINEER COMMISSIONER,
Washington, D. C., December 18, 1886.

SIR: I have the honor to inform you that the \$1,200 appropriated in the sundry civil bill for 1887 for the construction of a new sewer from the south side of the Bureau of Engraving and Printing to the corner of Fourteenth and D streets, to connect at that point with the city sewer, is insufficient for the purpose.

On account of the depth to which it is necessary to go to furnish proper drainage to the Bureau, the estimated cost of the sewer, shown in blue on the inclosed tracing, is \$1,994.35.

In this connection I desire to call your attention to the desirability of providing for the proper drainage of your building, as shown in red on the same tracing, by which the sewage of the Quartermaster's corral can also be intercepted, kept from the reclaimed flats, and delivered into the river below the Long Bridge. The estimated cost of the sewer, as shown in red, is \$2,445.30.

As the Quartermaster Department requires means of sewerage, it is suggested that you unite with that department in procuring an appropriation of \$2,500 from Congress to construct the sewer in the manner proposed.

Respectfully,

WILLIAM LUDLOW,
Engineer Commissioner, District of Columbia.

The CHIEF OF THE BUREAU OF ENGRAVING AND PRINTING,
Washington, D. C.

TREASURY DEPARTMENT,
BUREAU OF ENGRAVING AND PRINTING,
July 13, 1886.

SIR: I have the honor to invite the attention of the Department to the urgent necessity for making some provision for changing the location of the sewer from the building occupied by this Bureau, which discharges into the river near C street southwest.

This point is within the area to be reclaimed by the improvement of the river flats. The discharge takes place into a basin, which is inclosed on the side toward the river by an embankment, and which is now being rapidly filled with mud pumped into it from the river bed. The mouth of the sewer is now only 2 feet above the deposit of mud and earth in the basin, and at the present rate of progress on the work will soon be completely closed.

As it is impracticable to extend the present sewer, the authorities of the District recommend the construction of a new sewer from the south side of the building to the corner of Fourteenth and D streets southwest, connecting at that point with the city sewer on Fourteenth street. Connection cannot be made with the street sewer at a nearer point, for the reason that the sewer-pipes of this building are below the grade of that sewer. The estimated cost of the new sewer is \$1,800.

As it is represented that there are no funds available for the purpose at the command of the authorities of the District, and as it is doubtful whether the expense is a proper charge against the appropriations for engraving and printing, I have the honor to recommend that a special appropriation be asked for at once.

An appropriation for this purpose, among others, was asked for in my letter of April 2, 1886, which was transmitted to the House of Representatives by the Acting Secretary of the Treasury April 9, 1886, with his recommendation for favorable action thereon, and is printed as a part of Ex. Doc. No. 170, Forty-ninth Congress, first session, a copy of which is herewith transmitted.

Very respectfully,

E. O. GRAVES,
Chief of Bureau.

Hon. C. S. FAIRCHILD,
Acting Secretary of the Treasury.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
PUBLISHED WEEKLY
CHICAGO, ILL., U.S.A.
1917

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CONDITION AND COMMERCE OF NICARGAUA, HONDURAS,
AND SALVADOR.

M E S S A G E

FROM THE

PRESIDENT OF THE UNITED STATES,

SUBMITTING

*A special report by Commissioner Thomas C. Reynolds on the condition
and commerce of Nicaragua, Honduras, and Salvador.*

JANUARY 5, 1887.—Referred to the Committee on Foreign Affairs and ordered to be
printed.

To the Senate and House of Representatives :

Referring to my message of the 12th of January last, transmitting
the final report of the Commissioners appointed under the act of July
7, 1884, to visit the states of Central and South America, I have now
to submit a special report, by Commissioner Thomas C. Reynolds, on
the condition and commerce of Nicaragua, Honduras, and Salvador.

GROVER CLEVELAND.

EXECUTIVE MANSION,
Washington, January 5, 1887.

CONDITION AND COMMERCE OF NICARAGUA, HONDURAS, AND SALVADOR.

Mr. Reynolds to the President.

COMMISSION OF THE UNITED STATES
TO CENTRAL AND SOUTH AMERICA,
Washington, D. C., June 3, 1885.

SIR: Soon after the arrival in Guatemala, in March last, of Mr. Thacher and the undersigned, United States Commissioners to Central and South America, war was about to begin between Honduras on the one side (with Guatemala), and Nicaragua and El Salvador on the other; and it appeared impolitic, and probably impracticable, for them to visit those three Republics, or effect anything with any of their Governments, in furtherance of the objects of their mission.

The question of their proper course was happily and promptly settled by the orders, by cable, of the Secretary of State, of 21st of last March, that the undersigned should return to Washington to report the progress of the Commission, and that Mr. Thacher and the secretary of the Commission, Mr. Curtis, who was authorized to act also as Commissioner *pro tempore*, should proceed to South America. Those gentlemen left Guatemala on that journey on the 29th of last March. But, desiring to present to you a view, as full as it could be made before the close of their terms of office, of the commerce and condition of all Central America (reports upon Costa Rica and Guatemala having already been made), Mr. Thacher and the undersigned, composing the Commission after the resignation of its chairman, Mr. Sharpe, had previously decided that the undersigned, availing himself of the information then already accumulated, and of that which he might afterward procure, should prepare and present to you on behalf of the Commission a special report upon Nicaragua, El Salvador, and Honduras.

In the reports heretofore made of their investigations outside of the United States the Commissioners acted upon the opinion that, in advance of any full report on the general purpose of their mission, as defined by the act of Congress of July 7, 1884, creating it, "to ascertain the best modes of securing more intimate international and commercial relations between the United States and the several countries of Central and South America," they should report specially and separately on information and observation on the spot, on the condition and commerce of each of those countries visited by them under instructions from the Secretary of State. Such special reports would, in their judgment, not only be useful in elucidation and support of the views they might express in final full reports, but also aid in enabling others to judge of the soundness of those views. The same course is followed in this special report, now respectfully submitted to you.

NICARAGUA.

This Republic, less from its size and present population than from its geographical location, is the most important of the Central American states. Its area has never been accurately ascertained, and no entirely trustworthy census of its population has ever been taken. Its area is estimated by Lieutenant Sullivan (*Problem of Interoceanic Communication*, p. 34) at 58,000 square miles, its population at 400,000 in 1874. Keltie's *Statesman's Year-Book*, London, 1884, gives it an area of 49,500 square miles, English, and a population, in 1883, of 275,815, but estimated to be probably 400,000. The *Geografia de Centro-America*, by Cáceres, 1880, the standard text-book in Central American schools, gives it an estimated population of 400,000, and an area of 65,000 square kilometers, in round numbers, 25,000 square statute English miles (estimating the square mile at 2.58984649 square kilometers, the computation furnished to the undersigned by the United States Bureau of Statistics, or nearly $2\frac{3}{5}$ square kilometers). Mr. Paul Levy, in his very full work on Nicaragua, Paris, 1873, states that in 1867, according to the actual returns of a census by the Government of Nicaragua, the Republic contained, in round numbers, 153,000 inhabitants, but that after corrections of alleged errors by the ministry of the interior (*Gobernacion*), the official gazette published a census showing a population of 258,000. This figure Mr. Levy, on his own extensive knowledge of the country, pronounced exaggerated, and (page 238) estimates the population at the date of that census at 206,000, in the civilized part of the Republic, on an area of scarcely 16,000 square (geographical) miles. The entire territory of Nicaragua is stated by him, on the authority of the *Anuario General de Estadística* (doubtless the French *Annuaire Général de Statistique* of 1869), to contain 40,000 geographical square miles. The uncivilized portion of the Republic he estimated to have 30,000 inhabitants, including those in the Mosquito Indian territory.

His statement, that of the entire territory of Nicaragua three-fifths is occupied by wild Indians and other savages, is confirmed by the circumstance that on the map of Nicaragua, in the geography of Cáceres, the words "*parte casi desconocida y habitada solo por varias tribus de aborígenes no civilizados*," are stretched, in small capitals, over the entire eastern section of the Republic, about half of it, from the river San Juan to the Honduras line.

Of the 206,000 inhabitants estimated by Mr. Levy in 1867, 130,000 were in the four departments bordering on the Pacific and west of Lakes Nicaragua and Managua; 52,000 in the western sections of the two departments immediately north of those lakes, and only 24,000 in the department (Chontales) bordering on the left bank of the river San Juan and the northeastern shore of Lake Nicaragua. Whatever may have been the real population of Nicaragua in 1867, and whatever it may be now, it may be assumed with certainty, from the map in the geography of Cáceres, and oral statements to the undersigned of residents in that Republic, that the territorial distribution of it remains the same as Mr. Levy describes it to have been. Lakes Nicaragua and Managua cover about 3,000 English square miles.

Area and population.—From the foregoing it may be safely concluded that, in ascertaining the best modes of securing more intimate international and commercial relations between the United States and Nic-

aragua, the latter must be regarded, practically, as a Republic on the coast of the Pacific Ocean, with a "civilized" population not exceeding 300,000, on a settled territory, excluding the great lakes, of about 15,000 English square miles.

Classes of inhabitants.—The census of Nicaragua, under the Spanish Government, in 1778, gave, as the proportions of the races in its population, 2 pure whites, 13 Indians, and 11 of mixed blood (mestizos) in 26. No census taken since that date has given the population by races.

But all accounts agree that the relative number of the pure whites has been continuously diminishing, and Mr. Levy estimated the proportions in each thousand of the inhabitants of Nicaragua in 1873 as 45 pure whites, 5 negroes, 550 pure Indians, and 400 of mixed white, negro, and Indian blood. For both our Government, in cultivating international relations, and individuals, seeking commercial advantages in that Republic, these facts are important.

They affect especially the prospect of an increased consumption of our products and the supply of labor for industrial pursuits or international improvements by foreigners in that region.

The interoceanic canal.—A report on the best modes of securing more intimate relations between our country and Nicaragua would be incomplete without some reference to the project of a ship-canal by the route of the river San Juan and Lake Nicaragua. The subject has been so fully and ably elucidated in the various documents published by our Government, that it is not intended here to do more than present some facts ascertained during the visit of the Commissioners to Central America, and which appear to have been left unnoticed or not fully explained in those documents.

Some or all of them may have been noticed in the debates in the United States Senate on the last Nicaragua treaty; but as the undersigned is entirely ignorant of those debates, and even of the terms of that treaty, he trusts that he will be excused should some or all of those facts have been already noticed or made known. The same remark applies to discussions of that canal project in the press, as during his absence in Central and South America he very rarely had the comfort of seeing an American newspaper or other publication.

For many of those facts he relies on a work, approved by the Government of Nicaragua and published partly at its expense, under date of Paris, 1873. He will cite it more freely, as it seems to have become rare. Neither it in Spanish nor the version of it in French is mentioned in the very full list of works having reference to the subject of interoceanic communication in Lieutenant Sullivan's Problem of Interoceanic Communication, communicated to the United States Senate by the Secretary of the Navy on May 2, 1882. The title of that work, in Spanish, is (translated), Geographical and Economical Notes on the Republic of Nicaragua, its history, topography, climate, &c., and a complete exposition of the question of the interoceanic canal, by Paul Levy, engineer, member of the Geographical Society of Paris, &c. The work, a large octavo of 627 pages, gives the results of the author's travels and researches in Nicaragua for a long time, at the instance of scientific societies of Paris.

As Lieutenant Sullivan observes (Problem, page 129):

No matter how attractive the other features of a route may be, if suitable protection cannot be afforded at the entrances to the canal the project by such a route would be abandoned. The great desideratum for each terminus of a canal route is a spacious harbor, affording protection to the entrance of the canal and to the vessels awaiting transit.

Mr. Levy, with that striving, for which French engineers are noted, after absolutely perfect results, is still more emphatic. He says (Nicaragua, page 416):

The canal needs *absolutely* [the italics are his own] two excellent ports, safe and vast, one at each end of its extremities, because there may be days in which not twenty vessels may pass, but others in which three hundred may present themselves.

His computation of the extent of the canal traffic is based, he says, on data from the British Admiralty and the French Annals of Foreign Commerce. He adds that Lake Nicaragua would furnish ample room for vessels delayed for repairs, or for other reasons, but that "this precious advantage, although itself secondary, does not relieve from the absolute necessity of two ports, very large, very good and safe, at the extremities" of the canal.

In selecting an outlet and port for the canal on the Pacific coast, sufficient attention has, perhaps, not been paid to certain peculiarities of the climate and sea, in precisely the section within which that port has to be found. The depression in the mountain range, facilitating the opening of a canal between Lake Nicaragua and the Pacific Ocean, produces another important result. The trade-winds, sweeping up the valley of the river San Juan and over Lake Nicaragua, encounter no elevated ground to check their progress westward, but rush across that depression with augmented force, and produce on that part of the Pacific coast violent, sudden gusts of wind from the coast (*violentas ráfagas*), which have "given a bad repute to the Gulf of Papagayo." To the same cause is attributed the violent surf (*resaca*), called the *Tasca*, "which afflicts the entire western coast."

The barrier at the depression "is not sufficient to keep the trade-winds back, and they, blowing too strongly near the coast, oppose the tidal movements, which are there very strong. This contest, in proportion to its violence, produces a collision, which occasions the *Tasca*." (Levy's Nicaragua, p. 125.)

The occurrence of these gusts of wind and the violence of the *Tasca* surf are well known to navigators. Persons long resident in that part of Nicaragua have told the undersigned that those winds, when very strong, are sometimes called "northers"; and one was described as almost a hurricane. The Gulf of Papagayo is regarded as extending from Cape Natan, a little southeast of San Juan del Sur, to Cape Elena, in Costa Rica. How far above the former locality the influence of those violent, sudden winds is felt, the undersigned did not ascertain with accuracy; but, from the nature of their origin as above described, it may be assumed that they prevail along the entire depression of the land up to beyond Brito. They, with the *Tasca*, must make the mere roadsteads of San Juan del Sur, Nacascolo, and Brito frequently insecure and difficult of entrance and departure.

The Bay of Salinas, however, is admitted to be an excellent port. "It is nearly circular," says Mr. Levy (Nicaragua, p. 121), "of 6 or 8 square geographical miles of superficies, and 35 to 80 feet deep to a rocky bottom; no river enters into it, and consequently it receives no sediments. Cape Descartes protects it on the southwest and shelters it from the *Tasca* and sea-sands; its shores are high and so easy of access that vessels can moor close to them and discharge cargo as along a mole."

"The valleys which open upon this bay are pleasant and fertile, and the country healthy, so that it is difficult to understand how it could be that so perfect a means of circulation has no population on its shores or even in its neighborhood." Oral communications to the undersigned

by competent informants fully confirm the statements of Mr. Levy. The bay is represented to be land-locked, and thus, although on the Gulf of Papagayo, is fully protected from the *Tasca* and all dangerous winds, and the entrance to it is easy and deep enough to admit the largest vessels now afloat in ocean trade. Immediately southeast of it lies the smaller but equally excellent harbor of Santa Helena, and between the two a passage by water is said to exist; in any case the two harbors could be readily connected by a canal, and together would form a commodious and secure receptacle for all the vessels, which even the most sanguine can expect ever to be simultaneously awaiting entrance into, or departure from, the interoceanic canal.

Last winter the United States Navy officers of the *Ranger*, in conversations with the undersigned, substantially confirmed the above statements. It is respectfully suggested that they be directed to make accurate surveys of the bays of Salinas and Santa Helena, and also of that adjoining the latter on the southeast.

Should they still be in the condition in which they were represented to be in 1873, and Brito be selected as the Pacific port of the canal, they will be much safer harbors of refuge for vessels seeking that port than the roadsteads of Nacascolo and San Juan del Sur.

An objection to the selection of the Bay of Salinas as the Pacific port of the canal is the expense of constructing a passage from it to Lake Nicaragua, even without considering some other disadvantages, in the number of locks required, &c., on account of the height of the divide between the lake and the ocean. But, strangely enough, the reports of engineers differ very greatly as to that divide. The Spanish engineer, Don Manuel Galisteo, surveyed it in 1781, and reported it to be 284 feet above the ocean and 151 above the lake, thus giving the height of the lake above the ocean 133 feet. (Sullivan's Problem, p. 75.) Mr. Levy (Nicaragua, p. 427) states that Galisteo gave it at 135 feet. As the surface of the lake is ascertained to be 107.63 feet above the level of the oceans (Sullivan's Problem, p. 122), it would seem that the method used by Galisteo tended rather to exaggerate than to under-rate measurements. Spanish engineers in that age, as their works still show, were often very skillful, and their surveys should not be hastily rejected. Mr. Levy (Nicaragua, p. 438) states the divide between Salinas Bay and the lake to be 129 feet 9 inches above the latter, in about the same proportion to the 151 feet given its height by Galisteo as the real height of the lake above the oceans, 107.63 feet, bears to that given by him, 133 feet. This coincidence would indicate that Galisteo made careful measurements, but with apparently inaccurate instruments.

Mr. Levy does not mention any survey as furnishing his data. But as the French speculator, Mr. Felix Belly, who obtained a concession in 1858 from both Nicaragua and Costa Rica to construct the canal by what has been called the River Sapoá, or Oerstedt and Belly line, preferred it to all others for his interoceanic canal project, it is probable that Mr. Levy obtained those data from surveys made to carry it out, or from Mr. Belly's work (not known to the undersigned except by its title, as given in Mr. Levy's general list of authorities), "*A travers l'Amérique Centrale; Nicaragua et le canal interocéanique, Paris, 1867.*"

The instructions to Colonel Childs favored the Salinas Bay route, but the results of his survey, about 1850, were against it. They were: Elevation of the summit, 534 feet above the bay; elevation of a summit which might be established by means of a low dam, 432 feet; depth of cut required, 119 feet; ascending lockage from the lake, 320.5 feet; descending lockage to the Pacific, 432 feet. (Sullivan's Problem, p. 75.) In the

United States expedition of 1872, Commander Hatfield, succeeded in securing valuable information respecting the Sapoá, Lajas, Buena Vista, and Ochomoga routes between the lake and the Pacific. On the Sapoá (or Salinas Bay) route, the most southerly of the transverse valleys across the Cordilleras, a level and compass line was carried from the lake to the summit, which was found to have an elevation of about 900 feet above the lake. This elevation, together with the unfavorable aspects of the remainder of the route, which was examined without instruments, caused its abandonment as impracticable. (*Eodem*, p. 89.) The elevation of the divide, as given by Colonel Childs, of 534 feet above the bay, gives one of $(534 - 107.63)$ 426.37 feet above the lake.

It is difficult to understand how this rose to 900 feet in the interval of time between 1850 and 1872, as it is not alleged that there had meanwhile been any volcanic or other forces at work in elevating that part of the Cordillera known as the "Peninsula of Rivas" in Central American geography. On the other hand, Mr. Levy in 1873 (*Nicaragua*, p. 438) says of this line:

Survey very promising (*halagueño*); length, 17 miles; excellent port; but height of summit too great (129 feet 9 inches above the lake). Nevertheless, the explanation is incomplete, and until it shall have been made in a formal manner, there is a right to hope something better from the results of further operations.

Of the routes preferred by American engineers, Civil Engineer A. G. Menocal, U. S. Navy, who surveyed them in 1880, says:

The deepest cuttings required to reach the proposed level of the canal are: For the Sajas line, 43½ feet; for the river Del Medio route, 134 feet, the length of the respective lines being 17.27 miles for the former and 16.33 miles for the latter. (*Sullivan's Problem*, p. 123.)

Both those lines terminate in the roadstead of Brito. It does not appear that the Salinas Bay route was examined by Mr. Menocal, and of the surveys of Capt. E. P. Lull, U. S. Navy, in 1873, it is stated that—

As the Sapoá and Buena Vista routes were eliminated by the surveys of the previous year, it was unnecessary to investigate them any further. (*Eodem*, p. 91.)

Of course, civil engineers alone are competent to report upon the practicableness and cost of any particular route for an interoceanic canal; but, from the point of view of one ascertaining the best modes of increasing American commerce, the undersigned feels bound respectfully to suggest that, before any final decision about the route of the interoceanic canal, a new and accurate survey be made of that by the Sapoá Valley to Salinas Bay, so as to settle the question whether the height of its divide above Lake Nicaragua is 129 feet 9 inches, 151 feet, 426.37 feet, or 900 feet, or any other number; and also, by ascertaining the width of the Cordillera at that point (so that the amount of excavation needed can be computed), to facilitate estimates of the cost of the line. All the other lines proposed for crossing the peninsula of Rivas terminate in roadsteads—Escalante, Casaeres, San Juan del Sur, and Brito.

The artificial harbor proposed to be constructed at the last-mentioned point comprises "an area of about 67 acres, which is thought sufficient to meet the traffic of the canal, particularly if the proximity of the lake is considered, where vessels can find an ample, safe, and pleasant anchorage; and should an interruption occur in the navigation of the canal, the harbors of Nacascolo and San Juan del Sur, from 10 to 12 miles to the south, could accommodate a large number of ships with perfect safety." (Mr. A. G. Menocal, quoted in *Sullivan's Problem*, p. 131.) The perfect safety of those small roadsteads must be only relative.

Were temporary financial considerations and the placing of stocks and bonds favorably upon the market, mainly to rule, the most feasible route for the canal would, of course, be that which would promise the largest dividends on the capital invested and require the least actual outlay. In surveys under a charter from Nicaragua alone, or with a view to the opening of a canal by her sole authority, the engineers might unconsciously be biased against the Salinas Bay route, as it would have to pass through Costa Rican territory. By the treaty of April 15, 1858, between the two republics, claimed by Costa Rica to have been perfected, but disputed by Nicaragua, the boundary line between them touches the Sapoa River at a distance of two miles from Lake Nicaragua, and follows thence "an astronomical line to the center of Salinas Bay." (Levy's Nicaragua, p. 73.)

But if the interoceanic canal is to be constructed with a view, not merely to immediately proximate needs of commerce, but also in anticipation of the not very distant time when the United States will contain twice or thrice their present number of inhabitants, with a correspondingly increased commerce between their eastern and western coasts, any increased cost of the Salinas Bay line might prove to be a real economy, in placing the Pacific outlet in a magnificent harbor, capacious enough for all time. In addition, and with a view to the success of the canal in the near future, it should have at each entrance an amply commodious harbor to attract commerce to it. It will not be without formidable rivals. Mr. Squier's project of a railway from some one of the excellent ports on the Caribbean Sea to the magnificent Bay of Fonseca may ere long be carried out. Costa Rica is pushing the connection by railway between Port Simon and the Gulf of Nicoya; and a diminution of the expense and delays in transferring freight from vessels to cars may enable such transcontinental highways to compete with a canal. It would be unjust to the Nicaragua Ship-Canal, in the contest for a share of the world's commerce, to burden it with the disadvantage of a poor harbor at either of its entrances; and a good harbor must be such that vessels can discharge their cargoes at wharves. The Commission's report on Guatemala exhibits the burdens on commerce from expensive lighterage, it actually costing more to convey goods from a vessel to the shore than from San Francisco to the adjacent anchorage at San José.

A striking illustration of the power of a railway from a good port to compete with a way by water has recently been given in Nicaragua itself. An official report to the Nicaraguan Government by the revenue officer at Castillo (the principal point for import of goods by the Caribbean Sea and the river San Juan), under date of October 31, 1882, stated that the imports there during that fiscal year had fallen to \$442,832 from \$823,387 in the previous fiscal year, while a corresponding increase of importations had taken place at the Pacific ports of the Republic; and the officer attributes that change to the completion of the Government railway from the excellent port of Corinto to Lake Managua, in connection with a line of steamers on that lake.

Thus even a section of country not very distant from the Pacific which had received its foreign supplies from the lower San Juan River, saw its commerce diverted by a railway to Pacific ports.

The intimate connection of the project of an interoceanic canal through Nicaragua, with the "modes of securing more intimate" relations between the United States and Central and South America, has led the undersigned to state (perhaps at undue length) some facts which he deems to have been heretofore insufficiently noticed in official

publications, and which may influence the selection of a port on the Pacific for that canal. The selection of a similar port on the Caribbean Sea can be more briefly considered. The American surveys seem to have not extended to the country adjacent to the right bank of the river San Juan (Sullivan's Problem, pp. 125, 126). Some valuable information about that country and the so-called Colorado mouth of that river, is contained in the report to you on Costa Rica by the Commission to Central and South America, and more fully in the testimony accompanying that report. From that testimony and information orally given to the undersigned, agreeing with the very full description of the San Juan Valley in Mr. Levy's work on Nicaragua (pp. 101-108), the following statement may be considered correct.

The great river of the central interoceanic valley of Central America is the Sarapiquí, and the Upper San Juan and the San Carlos Rivers are affluents to it, somewhat as the Upper Mississippi is an affluent of the Missouri; but in the former case, as in the latter, the name of the less important of the two streams has been given to that formed by their junction. But even on the junction of the Upper San Juan with the San Carlos the latter dominates in given characteristics to their combined waters, and where these fall into the still greater Sarapiquí, those characteristics are intensified. The stream is muddy, continuously making deposits, which trees floating down from the Costa Rican forests often convert into islets. Formerly the great body of its waters entered into the harbor of Greytown, and, it is believed, contributed towards preserving its excellence. A secondary outlet or bayou, called the river Jimenez, entered the sea southwardly from Greytown, near the mouth of the river Colorado, a Costa Rican stream still larger than the Sarapiquí, and rising in the lofty mountains of Irazu and Turrialba.

This is the account of Mr. Levy (Nicaragua, p. 107); the entire region, however, is little known, and the general belief, at least in Costa Rica, seems to be that this great river empties into the Jimenez, and adds to the volume of water in that bayou, giving it its present name of Colorado Branch of the river San Juan. However this may be, it is certain that the river San Juan has abandoned its ancient course, which, according to oral statements to the undersigned by an observer of it lately, has become a mere succession of shallow pools between the head of the Colorado Branch and Greytown, which has ceased to have a port. (See the description of it by Captain Lull, U. S. N., in Sullivan's Problem, p. 130, and that by Commodore Jellicoe, in the Central and South American Commission's report on Costa Rica.)

"The Colorado," says Captain Lull, "discharges in the low stage 99 per cent. of the river flow;" in short, it is now the San Juan River. From the evidence before the Central and South American Commission in Costa Rica, it is clear that the Colorado forms an excellent harbor, having for many miles a depth of 60 feet; but the condition of the entrance to it is not as accurately known, the accounts of it not being uniform.

Engineers differ as to the best line for the interoceanic canal in the Lower San Juan valley, below Castillo. Not qualified to discuss purely scientific questions in their plans, the undersigned confines himself to stating them. The American engineers favor the cutting of a canal to Greytown along the left bank of the San Juan, thus avoiding the deposits of silt from the San Carlos and Sarapiquí (Sullivan's Problem, pp. 125-'26). Mr. Levy very decidedly takes the same view (Nicaragua, p. 436). It was also held, in conversation with the undersigned, by Addison Marbury, esq., chief engineer of the Nicaragua Railway, and familiar with the San Juan River country. He proposed that the San Carlos and

Sarapiquí Rivers and Colorado Branch should be left unchanged. As to the indispensable harbor at Greytown, he expressed no decided opinion, but stated that Señor Chamorro and Señor Zavala (the negotiator on the part of Nicaragua, of the late canal treaty with the United States), very influential and prominent statesmen of Central America, familiar with the various projects of the canal, favored the re-establishment of that harbor by turning the waters of the San Juan into their ancient channel. The same view was taken, in conversation with the undersigned, by Silvanus Miller, esq., chief engineer of the Northern Railway of Guatemala. He expressed the opinion that a dam could be constructed, at a comparatively small cost, at the head of the Colorado Bayou, turning the waters of the San Juan and all its Costa Rican tributaries into a channel directly to Greytown, and that the old condition of things there being thus restored, the harbor would also recover its former excellence. The American engineers, whose views are given in Mr. Sullivan's Problem, require the restoration of the harbor of Greytown—practically, the creation of an artificial harbor there, for a feature of the plan of Captain Lull (Problem, p. 130) is "to throw a dike across the head of the Lower San Juan, just below the forks, and thus turn all the silt-bearing waters through the Colorado, whose mouth is 18 miles south of Greytown." Thus the great body of the San Juan's waters would be diverted from the Greytown entrance, only the clear water of the canal and the small northern outlet of that river (the San Juanillo) would enter the harbor, which would thus be withdrawn from the influence, whether for good or for evil, of the full volume of the San Juan, and the harbor would be restored and maintained by the breakwater and dredging suggested by Captain Lull. Mr. Levy does not refer to any plan of artificially improving Greytown harbor, but says (Nicaragua, p. 436):

As to the port of San Juan del Norte [*i. e.* Greytown], it will be necessary to await the modifications which the making of the canal must produce in it, and if the regulation of the current and the re-establishment of the ancient volume (*caudal*) of the river should not restore to it its ancient qualities (*cualidades*), the only remedy will be to transfer the port to the mouth of the Colorado, constructing the necessary jetties.

He gives an unfavorable opinion of that location, and says it has a "bad bar," with only 10 feet of water (in 1873); but Mr. Marbury, in conversation with the undersigned, in March, 1885, stated that bar to have about 16 feet of water, and the shore to be an open roadstead. All accounts, however, agree that inside of the bar the Colorado mouth of the San Juan would make a magnificent harbor. (See the Central and South American Commission's report on Costa Rica, and the evidence accompanying it.) It has for many miles a depth of 60 feet. Mr. Levy wrote of it in 1873 (Nicaragua, p. 107):

It is a magnificent estuary (*exutorio*) of 300 to 400 yards in width and 4 fathoms at least in depth. The current is moderate (*regular*), and its length 19 miles. Its banks are low and somewhat swampy.

Mr. Levy, employed by Nicaragua, had the candor to state that one of his reasons for preferring a canal on the left bank of the San Juan, to Greytown, was that it would be entirely within the territory of that Republic (*eodem*, p. 436), and while he is fair in his statements about the Colorado Branch, he is evidently reluctant to admit that the entrance to the canal may have to be within Costa Rican territory.

But whether the canal terminates at Greytown or at the head of the Colorado Branch (this forming its harbor, as the Mississippi above the Eads jetties forms that of New Orleans), questions arise which may

affect the promotion of "more intimate international relations" between the United States and Central America.

The controversy between Nicaragua and Costa Rica about their boundaries was fully explained to the undersigned by Don Lorenzo Montufar, of Costa Rica, one of the most eminent lawyers and diplomatists of Central America, and late envoy of Guatemala to the United States, and may be thus succinctly stated:

Under the Spanish Government, the captain-generalcy or "kingdom" of Guatemala was divided into five provinces, bearing, respectively, the names now borne by the five Republics of Central America. The province of Nicaragua contained the districts (*partidos*) of Nicoya and Guanacaste, now composing about a fifth of the territory in possession of Costa Rica, and including the most valuable portion of her Pacific coast, as well as the southern coast of Lake Nicaragua and the left bank of the river San Juan down to Castillo. On December 9, 1825, the then Government of the Republic of Centro-America (a union of the five Republics or former provinces) granted the petition of the inhabitants of Nicoya and Guanacaste to be annexed to Costa Rica, "until order should be re-established in Nicaragua," then in a state of civil war, and ever since those valuable districts have been in the possession of Costa Rica. In April, 1838, the federal Congress of the Union dissolved it, declaring that each of the states which composed it should be free to adopt a popular representative Government for itself. On April 30, 1838, Nicaragua accordingly proclaimed its absolute independence, and formed its constitution, in which it claimed as its territory the same that covered the five districts (*partidos*) of the Spanish province, including Nicoya and Guanacaste. On April 15, 1858, Nicaragua and Costa Rica concluded a treaty about boundaries, which gave to the latter nearly the whole of Nicoya and Guanacaste; nevertheless, in its constitution of August 19, of the same year, Nicaragua defined its territory to be that "denominated anciently the Province, and, since the independence, the State of Nicaragua," and bounded it vaguely "on the southwest by the Republic of Costa Rica."

The validity of the treaty of April 15, 1858, sometimes called, after its negotiators, Cañas-Jerez treaty, and that of the previous annexation of Nicoya and Guanacaste to Costa Rica, depend greatly on nice questions of Central American constitutional and public law, lucidly explained by Señor Montufar, but which it would require undue space in this report to state fully. One important point, however, is that, as the limits of Nicaragua are defined in its constitution, and those of Costa Rica also in its own, a constituent assembly (in our phraseology a constitutional convention) alone can change such limits, and, consequently, that any treaty by the ordinary Government of either Republic with the other, or by both, with any foreign power, defining jurisdiction or granting rights or privileges, either to a government or to private parties, would be invalid without the approval of a constituent assembly in each, as to the disputed territory. A foreign power making a treaty with either Republic, as to that territory, without the constitutional assent of the other, would be regarded by the latter as interfering in its internal affairs.

The boundary between Costa Rica and Nicaragua, agreed on in the Cañas-Jerez treaty of April 15, 1858, is thus defined:

The line of division from the Atlantic shall begin at the extremity of the Punta de Castilla, at the mouth of the river San Juan, and continue, following the right bank of that river, to a point situated on the waters below the castle (*el Castillo*), and three miles distant from its fortifications. From that point a curve shall be drawn, whose

center shall be those fortifications, and said curve shall be constantly three miles distant up to another point above the castle, and two miles from the margin of the river. From that point on, the dividing line shall continue parallel to the windings of the river, and the southern shore of the lake, always at a distance of two miles, to the river Sapoá. From the point at which it meets the Sapoá, which it is well understood shall be two miles from the lake, a direct line (*linea astronomica*) shall be drawn to the center of the Bay of Salinas, on the Pacific, at which the line of demarkation between the two contracting Republics shall terminate.

[The copy of the Cañas-Jerez treaty promised to be forwarded to the undersigned having failed to reach him from Costa Rica, he translates the foregoing from the quotation in Levy's Nicaragua, p. 72. See also pp. 47, 53, 55, 71, for the history of the boundary before that treaty.]

The compromise embodied in that treaty consisted, in brief, of the retention by Costa Rica of the territory to which she had seemingly incontestable claims, dating from 1574, on the right bank of the river San Juan, from Castillo down to the sea at Greytown, and of her cession to Nicaragua of a strip 2 miles wide of the district of Guanacaste, along that river above Castillo, and along the southern shore of Lake Nicaragua. She thus retained within her own territory her three important rivers: the San Carlos, navigable by small steamers for 16 miles from its junction with the San Juan; the Sarapiquí, navigable in like manner for 20 miles to El Muella, whence a wagon-road leads to her capital, San José; and the Colorado, about 100 miles long, but she cut herself off from the Upper San Juan and Lake Nicaragua. (Levy's Nicaragua, pp. 71-72, 104-107, and the testimony accompanying the Central and South American Commission's report on Costa Rica.)

One effect of the claims of Costa Rica, fortified by the treaty of 1858, was, that after Mr. Michel Chevalier, the eminent French political economist and capitalist, had made a contract with Nicaragua for opening an interoceanic canal by the San Juan route, he refused "to accept it, except on the condition *sine qua non* that it should be ratified by the Congress of Costa Rica without any modification." (Levy's Nicaragua, p. 434.)

Mr. Levy, himself an engineer, stated in 1873 that whatever might be the route adopted for the ship-canal through Nicaragua, its cost under favorable circumstances (*en buenos condiciones*) should be estimated, in round numbers, at \$150,000,000. (Nicaragua, p. 439.) But every estimate must be merely approximative. There is only a very scant resident population on the San Juan River itself. The climate in the country about it is as unwholesome for the natives of the Central American uplands as for immigrants from other salubrious regions, and the labor for work on the canal there would have to be brought from the West Indies, as has been done in the construction of the Panama Canal. That for the work on the western sections could scarcely be obtained from the limited population of Central America on the Pacific coast, now almost exclusively devoted to light agriculture, from which even high wages for work on a canal would tempt but few useful laborers. It would have to be brought from Europe or the United States. Prices of all supplies produced along the line of the canal would also be very greatly increased. The future cost of labor and supplies would have to be liberally estimated.

Summary of facts about the Nicaragua ship-canal.—The information at present accessible is not sufficient to enable either a Government or private capitalists to determine whether this canal, with true far-sighted economy, or in the interest of future as well as present commerce, should terminate on the Caribbean Sea at Greytown, or at the Colorado branch of the San Juan River, and on the Pacific Ocean at Brito, or (even at an

additional cost of several millions of dollars in the Sapoia route) at Salinas Bay. To the selection of the Colorado branch or of Salinas Bay as a port of the canal the assent of Costa Rica is necessary, as the former is wholly and the latter partly within her territory. Whether the canal be made on the left bank of the San Juan to Greytown or only to the head of the Colorado branch as its port, and whether the waters of the San Juan be turned into its old channel to Greytown or wholly into the Colorado branch, both Nicaragua and Costa Rica, under international and public law, must consent to any such important change affecting the navigation of a great stream, the common property of both Republics, before the change could be safely made.

Finances.—In the almost profound peace which has reigned in Nicaragua since 1869 the Republic has made great progress. The data given below are taken from the latest official report, which the undersigned has procured, of its ministry of finance, published in 1883. The measure of value officially recognized in Central America, and in which the sums given in that report are stated, is called a *peso*, or dollar. It is very difficult to compute the value of that dollar in either gold or silver American coin. No gold coins, either domestic or foreign, are in circulation in Central America; very few silver coins from the mint of any Central American state, except those of parts of a dollar, remain in use; and the actual metallic currency of the country consists almost entirely of Mexican or South American silver coins. From all that the undersigned has learned on the subject, he concludes that the official *peso*, or dollar, of Central American Governments, used in the statistics given below, is intended to be equivalent of the old Spanish milled dollar. It is not necessary here to fix its exact equivalent in United States coin, either silver or gold. The progress of Nicaragua from time to time can be shown by noting the steps in it in her own official money. The returns of revenue and expenditures are by *biennios*, of two fiscal years each.

The ordinary revenues are stated to have increased from \$1,919,738.25 in the *biennio* of 1873-'74, to \$3,351,766.60 in that of 1881-'82; but as, in the latter, the end of the fiscal year had been changed from December 19 to November 19, the returns represented the revenues for only one year and eleven months. Had those of the twelfth month, \$39,812, been included, the revenues of the *biennio* of 1881-'82 would have been \$3,391,578.60. In the revenues of each *biennio* is included the unexpended surplus of the next preceding financial period; that surplus was an addition to the funds of those periods, as follows:

1873-'74.....	\$11,405 15
1875-'76.....	16,629 60
1877-'78.....	33,952 25
1879-'80.....	80,803 45
1881-'82.....	472,829 71

and at the end of this last period the surplus to be added to the revenues of 1883-'84 was \$293,702.52. This amount, as compared with the surplus of the next preceding *biennio*, shows a considerable decrease; but it is accounted for by extraordinary military expenses, of \$95,607.89, and a decrease of receipts from the tobacco, spirits, and powder monopolies, owing to revolutionary movements in Matagalpa and Leon, which, however, were promptly suppressed. On the whole a gradual steady improvement in the finances of Nicaragua, both as to the amount of revenue and as to economy in the expenditure of it, leaving at the end of each *biennio* an increasing surplus for future use, is clearly to be seen.

A great obstacle to negotiations with Central American or South American states of treaties of reciprocity admitting our products free of duty will be the difficulty most, if not all of them, might find in raising revenue to supply the place of the abolished duties on imports. An examination, in detail, of the finances of Nicaragua may throw considerable light on this subject, not only as to that Republic, but also as to the other States having similar revenue systems. No one of them, it is believed, except Guatemala, has any, even incipient or tentative, system of direct taxation on the value of property either real or personal. The entire Latin race, in Europe as well as in America, retains the ancient Roman aversion to taxation on property or capital, instead of on the products or income from it; and it is the concurrent opinion of all persons well acquainted with Spanish or Portuguese America that it would be difficult, if not impossible, for any Government to be strong enough to introduce there direct taxation similar to that in our own States.

The principal revenues of Nicaragua are derived from duties on imports and Government monopolies of spirits, tobacco, and powder, and an impost, which seems to be peculiar to intertropical America, on the slaughter of animals for food in the public slaughter-houses (*destace de ganado*). Included in the receipts are, also, those from stamped paper, fines, and penalties and "minor imposts"; and, in the general statement of the accountant-general (*contador mayor*), all receipts are put down, even when, as in the items about mails, telegraphs, and railways, the expenditures greatly exceed them.

The statement of that officer for the *biennio* of 1881-'82, shows a total of funds received in the treasury of \$3,534,642.88, and of expenditures of \$3,240,940.36, leaving in the hands of the Government at the end of the period \$293,702.52. Of those receipts the minister of finance in his report treats \$182,876.28 as not belonging to "ordinary" revenues, and makes the latter amount (as hereinbefore stated) for that *biennio* of twenty-three months to \$3,351,766.60. The surplus from the revenues of the previous period having been \$472,829.71, the real amount of receipts in that *biennio* was \$2,878,936.89.

Some of the items in that statement seem to be merely transfers of accounts, and are difficult to understand without a minute knowledge of Nicaraguan legislation; but they swell the total amounts of receipts and expenses without balancing each other. The following table shows the receipts and expenses in the *biennio* of each revenue in which the former exceed the latter:

Receipts from—	Received.	Expended.
Maritime duties	\$1, 275, 506 60	.....
Spirit monopoly	779, 811 12	\$260, 828 77
Tobacco monopoly	447, 029 07	139, 161 56
Slaughter-houses	193, 703 76	11, 023 89
Stamped paper	32, 647 50	1, 617 25
Powder monopoly	25, 750 69	12, 330 29
Public printing	1, 312 51	150 27
Minor imposts and duties on foreign spirits	16, 616 59	14 92
Fines and forfeitures	14, 592 78	1, 010 41
Public lands	3, 013 91	.....
Total	2, 789, 984 53	426, 137 36

The net revenues from the above stated sources were therefore \$2,363,847.17, without deduction of the expenses properly chargeable

to the collection of the maritime duties and to sales of public lands. In the report of the minister of finance they are not specified, but are doubtless included in the large sum charged to the "administration of the revenues."

The expenditures on the post-office, telegraphs, and the operation of railways amounted to \$169,863.63, the revenues to \$88,952.36; net expenses, \$80,911.27. Public instruction cost \$185,816.44, less \$9,178.21 receipts; net, \$176,638.23. Public improvements (*fomento*) \$563,917.80, less \$6,302 receipts; net, \$557,615.80. Sundry expenses (*gastos diversos*) amounted to \$100,587.37, less \$2,375.75 receipts; net, \$98,211.62.

In contrast with this wise liberality in expenditures for education and public improvements, those for the maintenance of the Government, strictly as such, show an equally wise economy. In the *biennio* 1881-'82 the expenses of the legislative, executive, and judicial departments were \$112,548.42; those of the department of the interior and ecclesiastical affairs (excluding post-office, telegraphs, and railways, already mentioned), were \$343,205.36, of which were \$51,306.35 for ordinary salaries, \$18,027.37 for ordinary expenses, \$65,834.77 for extraordinary expenses, \$28,860.37 for ecclesiastical affairs, and \$179,176.50 for revenue guards and the police. The war department cost \$389,466.39, of which, however, the disturbances before mentioned occasioned the "extraordinary" expense of \$125,607.99. The department of foreign relations cost \$12,723.08, and the secret service (*reservados*) \$9,200. The treasury department expended \$1,353,611.87, of which \$35,129.28 were for salaries of its officers, \$736,851.75 for the "administration of the revenues," and \$581,630.81 in payment of debts. Of this last sum \$550,058.39 were devoted to the payment of the "consolidated bonds" of the Republic.

The report of the minister of finance enters into long explanations concerning the public debt of Nicaragua; they may be condensed as follows: The English debt may be regarded as extinguished; a few outstanding bonds have not been presented, but the Government has the funds reserved to pay them. The total issue of "consolidated bonds" since 1877, \$1,455,718.60, has been reduced by payments since of \$984,613.20 of principal, and \$132,094.86 of interest. The amount in circulation at the end of the *biennio* of 1881-'82 was thus \$471,105.40 principal, of which \$19,096 were in the treasury. The actual debt was, therefore, in these "consolidated bonds," \$452,009.40 of principal, the interest thereon, since the date of issue, December 1, 1877, at the rate of 5 per cent. per annum, amounted to \$112,249; total, \$564,258.40. In addition Nicaragua owed, on November 19, 1882, \$133,618.50 in various obligations redeemable in her "consolidated bonds," \$82,298.10 in railway bonds payable in coin, and \$140,082.85 for loans and other obligations, payable in coin. The total of all these debts was \$920,257.85 on November 19, 1882, and the minister expressed confidence that the consolidated bonds would be paid in full within three years. The entire debt was less than one-third of the biennial revenues of the Republic, and will soon have been paid in full, unless the military expenses of its recent preparations to resist the reunion plans of Guatemala have temporarily exhausted its revenues.

Nicaragua also has a fluctuating debt in its treasury notes (*billetes del tesoro*), convertible into coin on presentation at the treasury, and, like our own greenbacks, furnishing a circulating medium of great utility, even in exchange, as there are no banks in the country. Of these notes six series have been issued, representing \$250,000; those in circulation represented about \$100,000, and the rest were in the chests of the vari-

ous Government offices as current funds. From the distinction in some of the tables accompanying the report between receipts "in money" and other receipts, it is evident that these treasury notes are received as cash in payment of customs and taxes.

To complete this survey of the finances of Nicaragua the following table is given, showing the progress of the gross revenue, ordinary and extraordinary, comparing that for the *biennio* of 1873-'74 with that of the *biennio* of 1881-'82:

Receipts from—	1873-'74.	1881-'82.
Maritime duties.....	\$749,920 15	\$1,275,506 60
Spirit monopoly.....	604,742 35	779,811 12
Tobacco monopoly.....	306,285 95	447,029 07
Slaughter-houses.....	144,207 05	193,703 76
Stamped paper.....	28,490 45	32,647 50
Powder monopoly.....	22,544 80	25,750 69
Public printing.....	1,074 40	1,312 51
Minor imposts.....		16,514 59
Sale of foreign spirits.....	4,248 25	102 00
Fines and forfeitures.....	13,358 80	14,592 78
Public lands.....	8,132 45	3,013 91

The "minor imposts" were first levied in the *biennio* 1877-'78, and amounted to \$3,374.90. The income from the sale of public lands rose to \$46,537.75 in 1875-'76, \$40,218.10 in 1877-'78, and fell to \$10,535.78, in 1879-'80. These changes indicate advancing prosperity, leading to increased purchases of public lands, until the supply of them had been comparatively exhausted. A remarkable feature also is that, while the increase of other revenues was about in proportion to the increase of population and general business in time of peace, the receipts from maritime duties nearly doubled. Of this the report says that, although in 1879 the still existing tariff of specific duties on the weight of goods imported replaced the former system of duties ad valorem, the rate of duty has been ascertained to have been nearly the same under both systems, of about 50 per cent.; and that the increase of that revenue arose "solely from the increased importation of merchandise required for consumption, in the development of the public wealth, favored by the peace the country has enjoyed, and from increased exactness in collecting the customs duties."

Another very creditable fact is, that while the receipts from the principal branches of revenue have increased, the expenses of collecting them have, in almost every branch, actually decreased, thus enlarging the net revenue. The most remarkable instances were that from the *biennio* 1873-'74 to that of 1881-'82 the expense of the tobacco monopoly fell from \$206,054.50 to \$139,161.56, and that of the powder monopoly from \$32,130.50 to \$12,330.29. On the other hand the expenditures for permanently useful purposes kept pace with the increase of the surplus revenues. The outlays, over and above receipts, were: in extending the telegraph system commenced in 1875, \$44,112.75 in the *biennio* 1875-'76; \$51,103.80 in that of 1881-'82; in the post-office department, \$23,579.75 (the income being only \$3,411.30) in 1873-'74, and in 1881-'82, \$19,850.56 (in addition to the income \$19,476.25); in public improvements (*fomento*), \$39,018.45 in 1873-'74, and \$577,615.80 in 1881-'82; and in public instruction \$6,842.50 in 1873-'74, and \$176,638.23 in 1881-'82. The receipts and expenditures for railways appear first in the *biennio* 1881-'82: the former were \$35,326.79; the latter

\$45,283.70; net expense, \$9,956.91. In the same period of five *biennios* the regular expenses of the government were but slightly increased in most of the departments; in some of them the decrease gives evidence of remarkable economy. In foreign affairs they fell from \$17,179.50 to \$12,723.08; in ecclesiastical affairs from \$34,173.60 to \$28,860.37; in military garrisons from \$134,832.25 to \$125,650.21; in ordinary civil expenses from \$27,968.85 to \$18,027.37; in extraordinary civil expenses from \$138,798.15 to \$65,834.77; and in ordinary military expenses from \$67,442.40 to \$52,861.28. Expenses of "war" were in 1873-'74, \$85,861.85; in 1875-'76, \$408.85, against which is credited a receipt of \$15,000, and the item is not found in the accounts of any subsequent *biennio*.

Commerce.—The same report of the minister of finance gives the following statement of the values of the imports into, and exports from, Nicaragua, in recent *biennios*:

Biennios.	Imports.	Exports.
1875-'76	\$1,982,239 27	\$3,289,014 89
1877-'78	2,181,176 98	2,595,257 06
1879-'80	2,936,483 96	3,708,331 95
1881-'82	3,362,544 44	4,022,317 51

Coffee and caoutchouc being the principal exports, the following account of the trade in them is given:

Coffee.

Exported in—	Quintals.	Total value.	Per quintal.
1877-'78	36,119 90	\$546,401 99	\$15 20
1879-'80	80,574 69	855,620 25	10 60
1881-'82	120,266 64	1,082,399 76	9 00

The fall in value of coffee to \$9 per quintal of 100 pounds is attributed not to any overproduction in Nicaragua, or deterioration of the quality of her coffee, but to the general fall of the prices of that article in the marts of the world.

Caoutchouc.

Exported in—	Quintals.	Total value.	Per quintal.
1877-'78	36,938	\$1,662,210 00	\$45 00
1879-'80	29,729	1,337,805 00	45 00
1881-'82	29,315	1,319,198 85	45 00

The report expresses the expectation that the extension of roads into the northeastern section of the Republic, abounding in caoutchouc forests, will revive the exportation of that product, now becoming scarce in the neighborhood of the river San Juan.

In the *biennio* 1881-'82, the exports and imports were as follows :

EXPORTS.

To—	1881.	1882.	1881-'82.
United States	\$761,562 73	\$894,398 15	\$1,655,960 88
England.....	639,285 49	624,153 61	1,263,439 10
France	197,806 79	168,567 53	366,374 32
Central America	130,354 10	128,174 89	258,528 99
Germany.....	56,897 13	107,718 07	164,615 20
Italy	34,718 88	18,338 95	53,057 83
Colombia.....	7,837 80	18,667 35	26,505 15
Chili		10,983 19	10,983 19
Cuba.....		130 00	130 00
Total merchandise	1,828,462 92	1,971,131 74	3,799,594 66
Total coin.....	125,748 52	96,974 33	222,722 85
Grand total	1,954,211 44	2,068,106 07	4,022,317 51

IMPORTS.

England.....	\$765,413 12	\$613,261 54	\$1,378,674 66
United States.....	388,636 86	424,269 21	812,906 07
France	345,705 99	295,601 29	641,307 28
San Juan del Norte.....	99,527 13	64,493 65	164,020 78
Germany	53,046 06	78,361 25	131,407 31
Central America.....	29,719 60	48,583 21	78,302 81
Italy	21,982 76	6,839 28	28,822 04
Colombia.....	1,936 67	4,587 60	6,524 27
Curaçoa.....	192 80	2,444 00	2,636 80
Ecuador.....	1,593 00	748 80	2,341 80
St. Thomas.....	86 74	1,559 20	1,645 94
Cuba.....	842 68	248 00	1,090 68
Total merchandise	1,708,683 41	1,540,997 03	3,249,680 44
Total coin.....	42,214 13	70,649 87	112,864 00
Grand total.....	1,750,897 54	1,611,646 90	3,362,544 44

Of the exports, \$1,337,679.93 were through the Pacific port of Corinto, \$403,464.65 through San Juan del Sur and the Costa Rican frontier, and \$44,925.17 through the interior custom-house of Chinandega and the Honduras frontier; total through the Pacific ports and adjacent frontiers, \$1,786,069.75. The imports of the same section were \$1,586,468.47. Through the ports of the San Juan River country the exports were \$2,236,247.76; the imports, \$1,776,075.97.

The report omits to state in detail the imports of coin, but gives the exports in the *biennio* of 1881-'82, as follows: To the United States, \$56,704.25; Colombia, \$27,943.93; France, \$26,125.37; England, \$22,193; Germany, \$4,655; Cuba, \$1,100; St. Thomas, \$953.90; Venezuela, \$300; and to the other Central American states, \$82,747.40.

The report gives minute details, from which the following statement is compiled, of the exports of the Republic in 1881-'82 of leading products :

Articles.	To United States.	To England.	To France.
Caoutchouc	\$1,042,393 95	\$275,403 60	\$433 80
Coffee.....	251,502 75	494,627 40	138,977 82
Hides	248,799 47	18,173 69	
Fustic.....	2,752 00	45,996 00	160,264 00
Cedar		9,000 00	21,576 50
Gold	52,134 81	324,218 05	1,742 00
Indigo.....	1,045 00	76,456 00	40,413 00

In addition to the above, Nicaragua exported to the United States, sugar, \$50,087.50 ; cacao, \$576 ; tortoise-shell, \$441 ; cocoanuts, \$5,998.60 ; copper, \$109.80 ; and manufactures, \$120 ; making a total exportation of \$1,655,960.80. She exported also to England, tortoise-shell, \$19,146 ; cotton, \$409.76 ; and sarsaparilla, \$8.60 ; making a total exportation of \$1,263,439.10. She exported also to France, brazil-wood, \$2,360 ; and mother-of-pearl, \$607.20 ; making a total exportation of \$366,374.32.

Her exports to Germany, \$164,615.20, were: Caoutchouc, \$967.50 ; coffee, \$158,381.28 ; hides, \$413.42 ; fustic, \$4,112 ; gold, \$741. Those to Italy, \$53,057.83 were: Coffee, \$35,583.84 ; hides, \$4,840.05 ; gold, \$273 ; indigo, \$8,724 ; cacao, \$1,056 ; brazil-wood, \$2,580.94. Those to Colombia, \$26,505.15, were: Coffee, \$1,566.45 ; sugar, \$24,938.70. Those to Chili, \$10,983.19, were: Coffee, \$1,760.22 ; cedar, \$6,210.82 ; mahogany, \$1,445 ; seed, \$1,567.15. To Cuba, gold, \$130. Her commerce with the other Central American states was *quasi* domestic, but indicating greater progress than that attained by her sisters in agriculture. She received from them \$78,302.81, and exported to them, fustic, \$2,416 ; cedar, \$50 ; sugar, \$22,135.90, rum, \$9,506.50 ; cacao, \$9,300 ; cattle, \$158,192 ; mules and horses, \$4,360 ; cheese, \$35,137.87 ; starch, \$912.80 ; maize and beans, \$5,781.62 ; purple-shell (*purpura*), \$1,776, and manufactures, \$8,960.30 ; total, \$258,528.99.

Strangely enough, the report contains no similar details concerning the imports into Nicaragua, and gives no information about the kinds, qualities, and values of the merchandise received from each foreign country respectively.

The minister urges upon the inhabitants of the eastern sections of the Republic to strive for a share in the trade with the United States in bananas and other fruits, and mentions the recent establishment of fruit plantations in the neighborhood of Blewfields, in Mosquitia, which, although under a special local government, is under the sovereignty of Nicaragua. He also expects that, on the completion of the Government railway from Corinto to Lake Nicaragua, the dye-woods of the Pacific sections may be more cheaply exported directly to the Atlantic than by the Panama railway, or around Cape Horn, now the usual route of that trade.

Ports and railways.—On the Caribbean Sea Nicaragua has the port of San Juan del Norte, or Greytown, hereinbefore described ; and on the Pacific, besides the roadsteads or small ports of San Juan del Sur, Nacasclo, Brito, and Casares, the excellent harbor of Corinto, being what remains of the former magnificent port Realejo. On the great Bay of Fonseca, in Nicaraguan territory, is the celebrated Royal Estuary (*Estero Real*), which at one time was expected to form part of an interoceanic canal, and is in reality an arm of the sea ; but at present the principal Nicaraguan port on the Pacific is Corinto. Mr. Marbury, chief engineer of the Nicaragua Railway, and well informed on the subject, stated to the undersigned that it has a length of at least 4 miles and a width of 1 mile, a depth of 22 feet on the bar at low water, the rise of the tide being 17 feet. The bar has never been changed, and the harbor is perfectly safe, free from high winds and *papagayo* tempests. He also stated that the narrow-gauge railway in process of construction for the Nicaragua Government by an American contractor, Mr. H. D. B. Norris, had been completed and opened to traffic from Corinto to Omatumbo (old Leon), whence communication by steamers was kept up regularly with Managua, the capital of the Republic ; and that the railway was in the course of rapid construction from Omatumbo, by way of Managua and Masaya, to Granada on Lake Nicaragua. When completed this

railway will furnish an economical and speedy outlet to the Pacific for all the products of the country around that inland sea.

Army and police.—In illustration of the economy of the Nicaraguan Government, mention may be made of the facts that its military force in active service (in garrisons) in 1882 consisted of 469 officers and men, and its revenue guards and police of 461. Its militia, enrolled and liable to be called into active service, in three classes, according to ages, numbered 15,094, principally in the departments on the Pacific coast.

HONDURAS.

The undersigned did not succeed in obtaining any official publications by the Government of this Republic, and the meager information concerning it herein given was gathered from other sources, mainly from conversations with Americans who had visited or sojourned in its western sections.

As in regard to all the other Central American states, the authorities differ greatly about the area and population of Honduras. The geography of Cáceres gives it 70,000 square kilometers (26,923 square miles), and a population of 350,000; Keltie's Statesman's Year-Book, 1884, the same population on 39,600 square miles. Bates's Compendium of Geography, 1882, the same area as Keltie, but a population of only 250,000; and Lieutenant Sullivan, in his "Problem of Interoceanic Communication," gives estimates to date of 1874 of 400,000 inhabitants on 50,000 square miles. The Government of Honduras is said never to have had any census of its population made, or any official computation of the extent of its territory.

In the absence of official reports it is difficult even to estimate the extent of its commerce or its revenues. Cáceres places the annual receipts at \$600,000; expenditures, at \$500,000; the imports at not exceeding \$1,000,000, and the exports at \$1,500,000. He states that its domestic debt is not ascertained (*ilíquida*), and its foreign debt \$33,000,000. This enormous debt was contracted for the purpose of building an interoceanic railway from the excellent harbor of Puerto Cortes, on the Caribbean Sea, to the Gulf of Fonseca, on the Pacific; but Cáceres asserts (what is generally believed) that the Government of Honduras received very little money from the bonds issued in evidence of that debt. With that money, however, a railroad was built from Puerto Cortes, about 37 miles long, to San Pedro, a point in the interior on the proposed line of the interoceanic railway. Accounts vary as to its present condition.

Honduras exports, mainly from its northern coasts, hides, cocoa, woods, fruit, sarsaparilla, caoutchouc, and hemp; it also sends cattle to Guatemala and Cuba. Its imports are mostly from Europe; it imports from the United States provisions, hardware, and other articles, but no dry goods.

All accounts sustain the ancient repute of Honduras for its mines of gold, silver, iron, and copper; but the difficulty and expense of transportation between the mines and the coasts retard their profitable development. Nevertheless, two New York companies, the Rosario mine owners and the Campbell Reduction Company, are reported to have made profitable investments in them. Labor is represented to be difficult to procure; as a whole the people are not industrious or enterprising, partly from the absence of a demand for well and promptly-paid labor and partly from the hereditary habit of wandering in search of

rich finds of gold. The Government, however, has endeavored both to find employment for the people and improve the communication between the different sections of the Republic. It has granted liberal charters for the construction of a railway from the Bay of Truxillo to the Guatemala line, and the opening of the Aguan and Patook Rivers to navigation. The fruit business is the principal one with the United States from the northern coasts and the islands contiguous to them; cocoanuts, bananas, oranges, and pineapples are sent to New Orleans, the house of S. Oteri, of that city, having shown commendable enterprise in building up that trade, and also a return trade in exports from it to Honduras. There is also a similar trade with Pensacola. Many sailing vessels are engaged in this fruit trade, which is constantly increasing in magnitude. Formerly the exportation of cattle to Cuba was carried on extensively, but it has almost entirely ceased, on account of the miserable condition of financial affairs in that island.

The greatest importance of Honduras to the commerce of the United States arises from the fact that it controls all the territory through which railways could be built directly connecting the ports on the Caribbean Sea which are nearest to our own with the Bay of Fonseca, the first good port, or rather collection of ports, on the Pacific south of the Isthmus of Tehuantepec. In a communication of Mr. Abram Cutler to Commissioner Thatcher, in December last, he said:

While in Honduras I traveled some 2,000 miles, and I examined every land route over which I passed with a view to the practicability of building railroads over them. The obstacles in the way were very slight, and on some routes are absolutely insignificant. But little rock excavation is necessary, and the grades will not be excessive, nor the curves sharp.

Honduras is capable of furnishing all the products peculiar to inter-tropical regions, and from its nearness to our coasts the development and control of its commerce by Americans depends mainly on the extent to which they will furnish the necessary capital to develop its resources, especially by railways and similar internal improvements.

The fiscal system of Honduras is the same as that of Nicaragua and the other Central American states. The revenues arise from duties on imports, monopolies of tobacco, spirits and powder, slaughter-houses, stamped paper, some export duties, the leasing of public lands, and the sale of timber on them. There are no direct taxes on either real or personal estate.

EL SALVADOR.

The official name of this Republic as given in the acts of its Congress, and other public documents, and in general use in Central America, is "El Salvador," often shortened into "Salvador." The name frequently used by foreigners to designate this Republic, "San Salvador," is properly that of its capital city only.

Area and population.—Cáceres states the area of this republic at 19,000 square kilometers, 7,307 square miles; Keltie at 7,225, Bates at 9,594, and Sullivan at 10,000 square miles. By the official census of October, 1882, the population was 612,813; 290,611 males and 322,202 females. No classification of the entire population by races has been obtained by the undersigned, but from the returns from several departments he estimates that about one-half of the population consists of pure Indians, and the other half of mixed races with a small percentage of pure whites and a few negroes. A seemingly insuperable difficulty in classifying the population arises from the varying nomenclatures in the depart-

mental returns, some dividing the population simply into whites, blacks, and Indians, others into whites and Indians, and others into Indians and Ladinos, a term originally used to designate civilized or "Latinized" Indians, but subsequently confined to persons of mixed blood. The distinction of races is, however, only of ethnological interest. In Salvador they are reported to be all industrious and enterprising, equal socially and before the law, and on the same grade of civilization in their respective classes. A remarkable illustration of the fixed character of the population as to nationality is found in the returns of the department of San Salvador; of its 63,254 inhabitants only 436 were not natives of the Republic, and even the neighboring Central American states contributed of the 436 but 180, almost entirely in the capital, which also held 34 French, 21 Spaniards, 3 English, 7 Americans, and 25 Italians. Mexico supplied 11 residents to it, and the ubiquitous Chinese are represented by 8 males. Even in the department of which the seaport La Libertad is the capital, there were only 699 foreigners to 43,735 natives of El Salvador.

Finance and commerce.—The revenue, expenditures, and commerce of Nicaragua were hereinbefore described so much in detail as well on account of the greater importance of that Republic, as compared with the other Central American states in the commercial and international relations of the United States, as also because the internal governments of all those states being essentially similar, the others may be judged of from a fuller knowledge of the polity of their central commonwealth. Therefore the subject in relation to El Salvador will be succinctly stated.

In the absence of late official publications (if any have been made), reliance may be had on the statement of Caceres, that in 1877 the revenues of El Salvador amounted to \$1,400,000, and her expenditures to \$1,300,000, her domestic debt to \$1,000,000, and her foreign was in process of payment. One very important measure, however, deserves special notice. Almost from time immemorial the "municipalities" (in fact villages and small towns) of El Salvador have held extensive commons (*ejidos*) and common fields (*comunidades*) under a system originating with the Indian tribes and continued and even extended by the Spanish Government, almost precisely similar to that of the "common fields" and "common field lots," familiar in the history of Spanish land titles in our Louisiana purchase from France. The commons were used generally in common by the inhabitants of the municipality or "commune," and portions of the common fields were assigned from time to time in severalty, but not in absolute ownership, to individual inhabitants for cultivation. While this system was, as a similar system in Russia and other Slavonic countries, very attractive to the inhabitants of the communes, originally tribes of Indians, and placed great power in the hands of the *caciques* or *alcaldes* intrusted with the control of the communal property, it was generally regarded as a great obstacle to the progress of the country, not only because large tracts, not required for immediate use by the inhabitants of the municipality, or *pueblo*, to which they belonged were left vacant, but also because those who had temporary allotments in the common fields were, like the Pueblo Indians of New Mexico, under a similar system, without the incentive of individual and full ownership to improve the cultivation of the land. A decree of the Congress of El Salvador on March 2, 1882, ordered the commons (*ejidos*) to be sold for the benefit of the municipalities as corporations, and the common fields (*comunidades*) to be equitably divided among the previous tenants in common of them respectively. The reports from the officials of the territorial departments of the Republic show that this radical change in the ownership of land has been effected with little

opposition or difficulty. Its results appear to have been to stimulate agriculture and enterprise generally, and enable the municipalities to make important improvements with the funds received from the sales of their commons. Those improvements generally consisted in repairs or construction of streets and communal roads, improvement of the supply of water, and the repairs or erection of school-houses, official buildings, and churches. The change is also of political importance in diminishing the influence of the *pueblo* chiefs, called *alcaldes*, but often hereditary *caciques* of local tribes, and not especially well affected towards a republican form of government.

The revenues of El Salvador are understood to be derived from the same sources as those of Nicaragua—duties on imports and exports, monopolies of tobacco, spirits, and powder, stamps and slaughter-houses, without direct taxation on either real or personal estate.

El Salvador has no territory on the Caribbean Sea; on the Pacific she has the excellent port of La Union, in the Bay of Fonseca, and the roadsteads of Acajutla and La Libertad. From this last, on account of its nearness to the most productive sections of the Republic, the largest portion of her foreign trade is carried on, except the export of coffee, which centers mainly at Acajutla.

From a table accompanying the report of the minister of the interior and public works (*Gobernacion y Fomento*) to the Congress of El Salvador on February 4, 1884, the following statistics have been compiled. It gives minute details of the commerce in the fiscal year 1883, but compares only its general features with those of the commerce for the fiscal year 1882. The valuations are in the dollars of account used in Central America, hereinbefore described in treating of Nicaragua, but which may be said to scarcely exist in actual coin. The commerce by ports was as follows:

Imports into and exports from El Salvador in 1883.

Ports.	Exports.	Imports.
La Libertad	\$1, 877, 999 93	\$1, 152, 120 70
Acajutla	2, 809, 485 68	747, 396 04
La Union	1, 173, 567 15	501, 946 11
Total	5, 861, 052 76	2, 401, 462 85

The exports by countries were as follows:

To—	1882.	1883.
England	\$1, 795, 358 50	\$2, 212, 670 15
Atlantic United States	479, 594 65	457, 748 65
California	982, 451 85	926, 273 30
Germany	555, 571 00	988, 507 60
Italy	126, 288 50	406, 398 82
France	830, 015 20	512, 220 50
Spain .....	.....	43, 295 00
Colombia	105, 038 87	33, 885 16
Ecuador	16, 088 54	70, 625 90
Peru .....	.....	20, 158 30
Chili .....	.....	14, 872 50
Guatemala .....	.....	1, 189 50
Honduras	6, 040 66	11, 993 92
Nicaragua	23, 207 12	60, 080 02
Costa Rica	92, 731 75	12, 765 41
Other countries	214, 653 08	88, 368 03
Total	5, 227, 039 72	5, 861, 052 76

The principal exports in 1883 were :

Coffee.—To England, \$1,078,942.15; to California, \$901,410; to the Atlantic United States, \$212,898.75; to Germany, \$761,530.60; to France, \$158,572.76; to Italy, \$268,152.50; to Colombia, \$14,130; to Ecuador, \$9,245; to Chili, \$3,622.50; and to several other countries smaller amounts, making a total of \$3,416,104.35, against an exportation of \$2,700,804.60 in 1882.

Indigo.—To England, \$884,015; to France, \$281,600; to Germany, \$194,250; to Italy, \$137,550; to the Atlantic United States, \$135,050; to California, \$600; to Spain, \$39,300; to Colombia, \$10,800; to Ecuador, \$61,050; to Peru, \$18,150; to Chili, \$11,250; and to several other countries smaller amounts, making a total of \$1,812,594.50, against an exportation of \$1,295,550 in 1882.

Hides and skins.—To the Atlantic United States, \$25,697.50; to California, \$450; to Germany, \$12,286; to France, \$1,100.50; to England, \$250; and to Italy, \$146, making a total of \$39,930, against an exportation of \$40,688.24 in 1882.

Balsam of Peru.—To France, \$22,092; to Germany, \$17,029; to England, \$10,353; to the Atlantic United States, \$3,433; to California, none; and to several other countries small amounts, making a total of \$53,612, against \$51,532 in 1882. It is remarkable that of this much-vaunted medicament, produced only in El Salvador (but misnamed "of Peru"), none was exported to any other Central American state, and only \$194 worth of it to Peru, through which it was formerly supplied to the markets of Europe, and which gave it its name.

Sugar.—To the Atlantic United States, \$50,130; to California, \$3,957; to England, \$30,192; to Italy, \$112,32; to Germany, France, and Spain, none; and to neighboring countries in Central and South America small amounts, making a total of \$93,232.61, against \$131,422.23 in 1882. An indication of the limited extent of sugar cultivation in Honduras and Nicaragua is seen in the fact that in 1883 El Salvador exported to the former Republic \$3,284.03, and to the latter \$2,110.98 worth of sugar, but none to Guatemala. Of *mascabado* (coarse sugar) she exported in that fiscal year to those two neighbors, \$1,528.25; to the Atlantic United States, \$2,061; to California, \$6,238.50; to England, \$4,173; to Germany, \$11.70; to Italy, \$45; to France and Spain, none. Her total export of *mascabado* was \$14,951.75, against \$4,029.60 in 1882.

Precious metals.—To England all the uncoined gold, \$6,844; of uncoined silver and silver coin, to England, \$197,121; to France, \$47,705; to the Atlantic United States, \$16,274; to California, \$13,456; to Nicaragua, \$27,614.36; and to other countries, \$49,883.80; making a total (of silver) of \$352,054.16, against an exportation of \$920,235.25 in 1882, in which year no gold was exported.

Tobacco and manufactures thereof, to various countries, but chiefly to other Central American states, \$22,838.65, against an exportation of \$41,416.30 in 1882.

The total of the exports above detailed was, in 1882, \$5,185,678.43, and in 1883, \$5,812,662.02. All other exports of El Salvador amounted in the former year to \$41,361.30, and in the latter to \$48,390.74. They were chiefly of agricultural products and small fabrics to neighboring countries; but it is to be noticed that of caoutchouc, which Nicaragua produces in such large quantities, El Salvador exported to the value of only \$9,891.60 in 1882, and \$13,448.10 in 1883; of this latter export \$12,024 worth were shipped to our Atlantic States.

The table above referred to does not compare either exports or imports, by ports, of 1882 with those of 1883, nor does it give any figures by which the value of each commodity exported to or imported from each foreign country in the fiscal year 1882 can be computed. It gives for that year merely the total values of exports and imports, by countries and commodities, for comparison with like total values in 1883.

The imports, by countries, were as follows :

From—	1882.	1883.
England	\$1, 243, 871 97	\$842, 489 98
Atlantic United States.....	413, 861 14	495, 350 80
California.....	314, 170 92	334, 565 54
France.....	596, 135 81	463, 461 09
Germany.....	214, 190 83	72, 285 41
Italy.....	14, 416 01	12, 887 00
Spain.....		3, 268 05
Colombia.....	219, 366 19	16, 912 37
Ecuador.....	30, 462 19	35, 908 37
Peru and Chili.....		
Nicaragua.....	48, 431 42	13, 802 87
Honduras.....	9, 162 28	5, 822 61
Costa Rica.....	7, 611 02	4, 941 57
Guatemala.....	2, 868 84	5, 333 17
Other countries.....	55, 507 65	94, 443 94
Total	3, 170, 056 27	2, 401, 462 85

The principal imports in 1883 were :

Cotton in thread or fabrics.—From England, \$607,604.65; from the Atlantic United States, \$158,404.48; from California, \$132.75; from France, \$130,436.38; from Germany, \$6,310.04; from Italy, \$606.70; from Spain, \$75; from other Central American States, and Colombia, Ecuador, Peru, and Chili, nothing; from other countries, \$37,176.33; making a total of \$940,746.33, against an importation of \$1,419,733.10 in 1882.

Linen in thread or fabrics.—From England, \$8,288.77; from the Atlantic United States \$833.06; from California, \$40; from France, \$548.13; from Germany, \$316.09; from other countries, nothing; making a total of \$10,026.05, against an importation of \$6,342.40 in 1882.

Woolen yarn and fabrics.—From England, \$12,743.03; from the Atlantic United States, \$16,660.80; from California, nothing; from France, \$11,860.54; from Germany, \$805.44; from other countries, \$33; making a total of \$42,102.81, against an importation of \$27,151.71 in 1882.

Silk in thread and fabrics.—From England, \$9,287.34; from the Atlantic United States, \$3,348.55; from California, \$4,762.50; from France, \$21,991.40; from Germany, \$1,239.72; from other Central American states, and Colombia, Ecuador, Peru, and Chili, nothing; from other countries, \$5,630; making a total of \$46,259.51, against an importation of \$36,416.40 in 1882.

Mixed woven stuffs.—From England, \$4,687.40; from the United States, nothing; from France, \$3,457.13; from Germany, \$1,035.98; from other countries, \$25; making a total of \$9,255.51, against an importation of \$5,256.97 in 1882.

Flour.—From California, \$187,397.09; from all other countries, nothing; against an importation of \$174,776.36 in 1882.

Wines and strong liquors.—From France, \$72,992.61; from the Atlantic United States, \$12,161.38; from California, \$6,808.39; from England, \$17,183.19; from Germany, \$19,952.15; from Italy, \$4,529.71; from Spain, \$1,982.45; from Colombia, \$519.63; from the other Central American states, and Ecuador, Peru, and Chili, nothing; from other countries, \$6,592.57; making a total of \$142,722.08, against an importation of \$190,795.70 in 1882.

Glassware and crockery (loza).—From England, \$9,653.96; from France, \$9,357.80; from Germany, \$2,490.79; from the Atlantic United States, \$2,272.47; from California, \$64.10; from other countries, nothing; making a total of \$23,839.12, against an importation of \$19,163.59 in 1882.

Drugs, medicines, and perfumery.—From the Atlantic United States, \$56,377.66; from California, \$330.54; from France, \$39,390.95; from England, \$11,101.43; from Germany, \$1,399.66; from Spain, \$570.60; from all other countries, \$439.78; making a total of \$109,610.62, against an importation of \$101,601.45 in 1882.

Iron ware (ferreteria).—From England, \$28,570.39; from the Atlantic United States, \$28,066.29; from California, \$2,946.68; from France, \$5,891.57; from Germany, \$5,499.84; from other Central American states, Colombia, Ecuador, Peru, Chili, Spain, and Italy, nothing; from other countries, \$4,195.85; making a total of \$75,174.62, against an importation of \$90,203.20 in 1882.

Machinery.—From the Atlantic United States, \$30,117.72; from California, \$6,136.20; from England, \$21,691.22; from France, \$862.51; from Germany, \$153.57; from other countries, nothing; making a total of \$58,961.27, against an importation of \$39,862.98 in 1882.

Provisions (comestibles).—From France, \$14,263.08; from England, \$10,321.28; from the Atlantic United States, \$3,325.30; from California, \$7,308.61; from Italy, \$887.84; from Ecuador, \$3,654.73; from Colombia, \$180.20; from other Central American States, \$3,243.09; from Germany, \$2,018.81; from Peru, Chili, and Spain, nothing; from other countries, \$6,937.94; making a total of, \$52,140.88 against an importation of \$84,711.22 in 1882.

Fine hardware and haberdashery (merceria).—From the Atlantic United States, \$59,526.38; from California, \$61,904.67; from France, \$118,201.65; from England, \$59,568.41; from Germany, \$17,490.55; from Italy, \$5,900.55; from other Central American States, \$9,491.63; from Colombia, \$4,636.40; from Ecuador, \$689; from Peru, Chili and Spain, nothing; from other countries, \$14,287.30; making a total of \$351,696.54, against an importation of \$435,088.91 in 1882.

Coined money (whether gold or silver not distinguished).—From the Atlantic United States, \$35,983; from Colombia, \$8,800; from Ecuador, \$4,200; from other Central American States, \$10,912; from Peru, Chili, California, England, France, Germany, Italy, and Spain, nothing; from other countries, \$13,800; making a total of \$73,695, against an importation of \$313,194.74 in 1882.

Various free articles (the designation in the table).—From the Atlantic United States, \$86,997.04; from California, \$56,695.23; from England, \$41,339.38; from France, \$29,259.71; from Germany, \$13,463.52; from Italy, \$952.20; from Ecuador, \$11,004.46; from Colombia, \$2,659.14; from the other Central American states, \$5,740.34; from Peru, Chili, and Spain, nothing; from other countries, \$2,486.85; making a total of \$250,607.87, against an importation of \$195,982.23 in 1882.

The total of the imports above detailed was in 1882 \$3,140,280.96, and in 1883 \$2,374,235.30. All the other imports of Salvador amounted in the former year to \$29,775.31, and in the latter to \$27,227.55; \$13,223.87 in printed books and \$16,551.50 in rush (*juneo*) hats. Of the amount in 1883, \$16,384.18 were in those hats; \$16,360.18 being from Ecuador and \$10,843.37 in printed books, chiefly from France; but \$1,315.48 from the United States, and only \$640 from Spain. This is explained by the fact that nearly all the books in Spanish imported into Spanish America are printed in France or Belgium.

The undersigned greatly regrets that the Commission did not succeed in obtaining full reports for several consecutive years of the finances and commerce of Salvador, in order that, by comparing them, an accurate view could be had of her resources and of the progress of our commerce and of that of other nations with that flourishing Republic. But even the facts above detailed suffice for sound deductions from them as to what our merchants have already accomplished and the steps they should take towards securing more intimate commercial relations between the United States and Central America.

It will have been noticed in the above statements that while the amount of exports to or imports from a named country is sometimes very small, that of a like commerce with "other countries" is much greater. This mode of statement is occasioned by the form of the official report of the minister of El Salvador. Certain principal countries were selected for details of statistics, and all others, whatever the amounts of their commerce respectively with that Republic, were placed together in a single entry. Among these "other countries" were doubtless Holland, Belgium, and Norway, which have a growing commerce with Central America.

Nothing is stated in this report concerning railways in El Salvador, as those completed or projected there are only of local importance. But it should be noted that through her territory lies the most practicable route for connecting the railway system of the United States and Mexico with the Isthmus of Panama.

I have, &c.,

THOS. C. REYNOLDS,
Commissioner, &c.

FOREIGN CUSTOMS DUTIES.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

Letter from the Secretary of State, inclosing statements of the customs duties levied by foreign nations upon the produce and manufactures of the United States.

JANUARY 5, 1887.—Referred to the Committee on Ways and Means and ordered to be printed.

To the House of Representatives :

I transmit herewith a letter from the Secretary of State, inclosing statements of the customs duties levied by foreign nations upon the produce and manufactures of the United States.

GROVER CLEVELAND.

EXECUTIVE MANSION,
January 5, 1887.

DEPARTMENT OF STATE,
December 22, 1886.

To the President :

I submit herewith a number of tables, prepared by the consular officers of the United States in reply to an inquiry made by the Department concerning the customs duties levied in foreign countries upon the produce and manufactures of the United States. In framing this inquiry only such articles were included as are exported from this country to foreign markets, the design being to show what burdens are imposed upon existing commerce, and to leave for a future inquiry what hindrances or prohibitions are entirely preventing the sale of American products in competition with the products of other nations. In a future report these tariffs will be considered in detail, and their restriction and retaliatory features pointed out.

Upon the importance of this subject at the present time I need hardly dwell. The demand for new markets for American products has

become almost imperative, and these markets must be sought among those nations which, from fiscal or protective necessity, from the need of revenue or the desire of fostering manufacturing industries, have imposed duties upon articles of foreign growth or production which are most onerous and oppressive, not only to the consumer, but to the American exporter. A comparison between the tariffs herewith presented and that of the United States may point out in what lines an export trade in American products may be built up by a judicious remodeling of our own tariff.

In conclusion, I would call your attention to the fact that no nation, claiming to be civilized, imposes duties upon works of art at all commensurate with those levied under the tariff of the United States.

Respectfully submitted.

T. F. BAYARD.

EUROPE.

AUSTRIA-HUNGARY.

Customs duties collected under the tariff laws of Austria-Hungary on the articles named in the following list (per 100 kilograms), being products and manufactures of the United States.*

[Prepared by Consul-General Jussen.]

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
1	Agricultural implements:		
	Machines out of wood, <i>i. e.</i> , with more than 75 per cent. of wood, duty raised by recent amendment from 3 florins to	5. 00	\$2 40
	Machines out of base metal, <i>i. e.</i> , with more than 50 per cent. of base metal, duty raised from 10 florins to	15. 00	7 20
	Machines and apparatus not particularly enumerated, duty raised from 6 florins to	8. 50	4 08
	Thrashing-machines	7. 00	3 36
	Harrows, iron	4. 00	1 92
	Harrows, roughly painted or polished	5. 00	2 40
	Harrows, finely painted or polished	8. 50	4 08
	Plows, wooden, not painted	1. 00	48
	Plows, with iron trimmings, painted or varnished	3. 00	1 44
	Plows, of wrought iron or steel, with or without wood, partly painted and polished	5. 00	2 40
	Same, polished	8. 50	4 08
	Steam plows	4. 25	2 04
2	Animals (per head):		
	Oxen, raised from 10 florins to	15. 00	7 20
	Steers	4. 00	1 92
	Cows	3. 00	1 44
	Young cattle, raised from 2 florins to	3. 00	1 44
	Calves, raised from 1 florin to	1. 50	72
	Hogs	3. 00	1 44
	Horses and foals	10. 00	4 80
	Foals who accompany the mares	Free.	
	Mules	2. 00	96
	Sheep and goats	. 50	24
	Lambs and kids	. 25	12
	All other animals not especially enumerated	Free.	
3	Art works	Free.	
	But all decorated articles intended for ordinary use are to pay duty according to material; for instance, painted wall-paper or decorations, rolleaux, letter paper, cups, &c.		
4	Bark and extracts, coloring wood:		
	In blocks	Free.	
	Ground or cut	. 50	24
	Barks, roots, leaves, blossoms, fruits, gall-nuts, &c., cut, ground, or broken, for coloring and tanning	Free.	
	Extract of chestnut wood, garancine and garancineth, litmus and sepia	1. 50	72
	Catechu (terra japonica), kino, kermes kernels, lacdye	Free.	
	Orseille, persio, indigo, cochineal, tanners' and coloring extracts not especially mentioned	3. 00	1 44
	Indigo and cochineal, imported by sea	Free.	
5	Blacking raised from 1.50 florins to	5. 00	2 40
6	Bones, hoofs, horns, &c.	Free.	
7	Books, maps, engravings, &c. The internal stamp tax to be paid on almanacs, newspapers, &c.; if the binding of books, maps, music, manuscript, or pictures comes within the appellation of notions (<i>kurzwaaren</i>) they pay duty according to material coverings; envelopes, or cartons into which books or pictures are placed loosely, pay duty according to material	Free.	

*100 kilograms = 221½ pounds English.

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
8	Brass and manufactures of: Copper, metal, nickel, tombac, and other metals not especially enumerated, and metal mixtures: Crude, old, broken as waste, quicksilver, mercury.....	Free.	
	Brass in heavy pieces and castings over 5 kilograms, in bells or pipes or tubes over 10 kilograms in weight.....	6.00	\$2 88
	In bars or sheets and wire over 0.5 millimeters thick.....	8.00	3 84
	Sheets and wire of 0.5 millimeter and under, sunken or perforated sheets.....	10.00	4 80
	Silver-plated wire, plates, or sheets out of copper or metal-leonine wire (imitation) not worked into any forms or shapes, raised from 15 florins to.....	30.00	14 40
	Manufactures of copper and metal: Common metal ware, as rollers, boilers, tubes, also in connection with wood or other material.....	10.00	4 80
	Polished, varnished, nickeled.....	12.00	5 76
	Metal wares, fine, not specially described, telegraph cables raised from 15 florins to.....	20.00	9 60
	Metal wares, very fine, articles of luxury, <i>i. e.</i> , decorated, pressed, or nickeled, Britannia metal, bronze, if not subject to higher duty as notions, raised from 30 florins to.....	50.00	24 00
	Metal cloths, fine, pens, metal thread, covered wire, raised from 30 florins to.....	50.00	24 00
	Gun caps, explosive, and brass cartridges with caps.....	24.00	11 52
9	Breadstuffs: Barley, raised from 25 kreutzers to.....	75	36
	Bread and biscuits, bread, common wheat or rye and ship's biscuits raised from 1.50 to.....	3.75	1 80
	Indian corn, raised from 25 to.....	.50	24
	Oats, raised from 25 kreutzers to.....	.75	36
	Rye, raised from 25 kreutzers to.....	1.50	72
	Wheat, raised from 50 kreutzers to.....	1.50	72
	Malt, raised from 60 kreutzers to.....	1.50	72
	Flour and products of flour, as grit, shelled barley, &c., raised from 1.50 florins to.....	3.75	1 80
10	Bricks.....		
11	Brooms and brushes: Brooms and brushes out of rice straw and other vegetable material.....	4.00	1 92
	All others.....	15.00	7 20
12	Candles: Tallow candles.....	6.00	2 88
	Wax candles, tapers, &c., raised from 10 florins to.....	25.00	12 00
	Candles not especially enumerated, such as sperm, palm oil, or paraffine candles.....	11.00	5 28
13	Carriages and horse cars, street vehicles (per piece): Freight wagons or sleighs.....	3.00	1 44
	Wagons, buggies, or carriages, without leather or upholstery.....	25.00	12 00
	Same, with leather or upholstery.....	75.00	36 00
	Sleighs as described under pay one-half; those under, two-thirds of said duty. Freight-cars, raised from 5 florins to.....	7.00	3 36
	Passenger-cars, not upholstered, raised from 6.50 florins to.....	8.00	3 84
	Upholstered passenger-cars.....	9.00	4 32
14	Cars (railroad and steam) pay same rate of duty as horse-cars. (See No. 13.)		
15	Chemicals: Borax, crude; acid of borax; Chili saltpeter, crude; sulphur, in pieces, sticks, or ground; sulphur blossom; antimony; tartar, crude and refined; tartar acid; lime. Added to this list under recent amendment, viz: phosphorus and phosphoric acid.....	Free.	
	Fertilizing acids, waste of manufacture for fertilizing purposes.....	Free.	
	Chloride of magnesium; glauber salts.....	.20	10
	Arsen, metallic arsenic, arsenic acids, arsenic sulphur, iron acids of all kinds, vegetable acids, crude, zaffer, powdered glass, spodium, muriatic acid, iron vitriol.....	.50	24
	Sulphuric acid, raised from 50 to 75 kreutzers.....	.75	36
	Soda, crude or crystallized; potash, kalium, sulphuric natrium, and bisulphuric acid.....	.80	38
	Glycerine and glycerine lye.....	.80	38
	Soda ash.....	1.20	57
	Potash of more than 85 degrees.....	1.50	72
	Alum, ammonia, sulphate of, sal-ammonia and spirits of same, hartshorn, sulphate of alum, and ammoniac, admonter, copper and zinc vitriol, lead ashes, litharge, borax, refined, chloride of lime, acetate of lime, kali saltpeter, refined bisulph. of carbon, waterglass, aniline oil, carbolic acid, crude, nitrobenzol, anthracen, crude, naphthaline.....	1.50	72
	Barytwhite, bleaching lye, verdigris, putty of all kinds, soda bicarbonate, potash and carbonate of ammonia.....	3.00	1 44

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
15	Chemicals—Continued. Potassium, sodium, sulphate of lime, hyposulphate of lime, manganate and permanganate, sulphate and hyposulphate of soda, oxalic acid, sorrel salt, sulphate of magnesia, white lead, white zinc oxyde, gray zinc oxyde, mennig and massicot, clay hydrate.....	4.00	\$1 92
	Acetate of lead, sugar of lead, acetate of alumina, zinc ashes, chromate of potash and soda, yellow and red, zinc salt, and other zinc preparations.....	6.00	2 88
16	Clocks and watches (per piece): Pocket watches— With gold or gilded cases..... With silver or silver-plated cases..... With other cases..... Cases for pocket watches: Gold or gilded..... Silver or silver-plated..... All other cases according to nature of material. Works for pocket watches..... Clocks: Ordinary hanging clocks of wood; their works and furniture raised from 30 florins to..... Clocks and clock works not specially enumerated, when they do not come within the class of notions (kurzwaaren) raised from 50 florins to..... Tower clocks and parts thereof.....	1.00 .50 .30 .70 .20 .30 50.00 100.00 10.00	48 24 14 34 10 14 24 00 48 00 4 80
17	Coal: Coal, turf, coke, and all fuel composed of these materials.....	Free.	
18	Copper: Crude ore or old, broken, or waste..... In cast shape, i. e., in bells or tubes and pipes, weighing not more than 5 kilograms, and in other wares weighing not more than 10 kilograms..... In bars or plates..... Wires 0.5 millimeter and under thick, sunken and perforated plates. Sheets of copper and metal, imitation leonine ware; raised from 15 florins to.....	Free. 6.00 8.00 10.00 30.00	 2 88 3 84 4 80 14 40
19	Cotton, manufactures of: Cotton, raw, carded, bleached, dyed, and waste..... Cotton wadding..... Cotton yarns, single— Up to No. 12 English..... Over No. 12 and up to No. 29 English..... Over No. 29 and up to No. 50 English, raised from 12 florins to... Over No. 50 English..... Added under new amendment: Cotton yarn, double, raw— Up to No. 12 English..... Over No. 12 and up to No. 29 English..... Over No. 29 and up to No. 60 English..... Over No. 60 English..... Cotton yarn, single or doubled, bleached or dyed— Up to No. 12 English, raised from 10 florins to..... Over No. 12 up to 29 English, raised from 12 florins to..... Over No. 29 up to 50 English, raised from 16 florins to..... Over No. 50 English..... Cotton yarns, raw, treble twist or more, bleached or dyed..... On spools or arranged for retail trade, raised from 30 florins to... Manufactures of cotton, plain and common, out of yarn No. 50 and under, 38 threads or less, to 5 millimeters square— Raw, raised from 32 florins to..... Bleached, raised from 40 florins to..... Dyed, raised from 50 florins to..... Woven in various colors, raised from 60 florins to..... Manufactures, figured, out of yarn No. 50 and under, 38 threads or less, to 5 millimeters square— Raw, raised from 40 florins to..... Bleached, raised from 50 florins to..... Dyed, raised from 50 florins to..... Woven in various colors, and printed, raised from 70 florins to...	Free. 5.00 6.00 8.00 14.00 16.00 8.00 10.00 16.00 12.00 12.00 14.00 18.00 20.00 24.00 35.00 34.00 45.00 55.00 70.00 45.00 55.00 65.00 80.00	2 40 2 88 3 84 6 78 7 68 3 84 4 80 7 68 5 76 5 76 6 72 8 64 9 60 11 52 16 80 16 32 21 60 26 40 33 60 21 60 26 40 31 20 38 40
20	Earthen, stone, and china ware: Stoneware— Cut-stone slabs, unpolished, excepting slate slabs and lithographer's stone..... Articles not specially enumerated made from alabaster, marble, porphyry, granite, and similar hard stones— Crude stonemason work, unpolished..... Other unpolished stone manufactures..... Same polished, polished slabs.....	1.50 1.50 3.00 7.50	72 72 1 44 3 60

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
20	Earthen, stone, and china ware—Continued.		
	Other articles not specially enumerated made out of other stones than those above mentioned—		
	Crude stonemason work, unpolished	0.50	\$0 24
	Other unpolished articles	1.50	72
	Same polished, polished slabs	3.00	1 44
	Same duty if article is connected with wood or iron.		
	Slate—		
	In slabs, only cut	0.75	37
	Roof slates	1.00	48
	Polished, blackened, lined, and in frames of coarse wood	3.00	1 44
	Cement wares, polished, painted, or varnished	3.00	1 44
	Asbestos wares—		
	Asbestos paper, unformed	5.00	2 40
	Same formed and perforated	12.00	5 76
	Asbestos weavings, also in connection with wire of base metal ..	12.00	5 76
	Same in connection with other weaving material	20.00	9 60
	Same if not classed under notions in connection with any other material	30.00	14 40
	Grind, whet, and lithographer's stones—		
	Colored stones, natural polishing, cleaning stones, or earth pre- pared for retail sale	5.00	2 40
	Earthenware—		
	Common brick, roof tiles, and earthen pipes, unglazed	Free.	
	Same, glazed	0.50	24
	Tiles of common form, up to 5 kilograms each	0.50	24
	All others	1.00	48
	Paving material and pipes out of glazed earth or clay	1.00	48
	Vessels for manufacturing purposes	1.00	48
	Common stoneware, as jugs, &c.	1.00	48
	Same, common earthenware	0.50	24
	Same, connected with wood or iron, without polish or varnish ..	2.00	96
	Building ornaments of terra cotta, glazed and unglazed; ordi- nary stoves and parts thereof, wall and floor tiling	3.00	1 44
	Earthenware not specially mentioned—		
	Of one color, or white	5.00	2 40
	Of more than one color, painted, decorated, printed, gilded, or silvered	8.00	3 84
	Porcelain—		
	White	7.00	3 36
	Colored, painted, printed, silvered, or gilded	15.00	7 20
	Earthenware in connection with other material, if not classed under leather or metal ware or notions	15.00	7 20
21	Fertilizers:		
	All animal, vegetable, and artificial fertilizers	Free.	
22	Fish:		
	Fresh river lobsters raised from 1 florin to	2.00	96
	Herring, salted or smoked	3.00	1 44
	Fish not especially enumerated, salted, smoked, or dried	5.00	2 40
	Caviar and caviar surrogate	50.00	24 00
	All in cans or bottles hermetically closed, excepting caviar	40.00	19 20
	All provisions not especially enumerated	40.00	19 20
23	Flax, hemp, and jute manufactures:		
	Flax and hemp yarns; yarns not especially enumerated—		
	Single, raw	1.50	72
	Single, bleached or colored	5.00	2 40
	Twisted, raised from 12 florins to	18.00	8 64
	Linen yarn adjusted for retail—		
	Single	18.00	8 64
	Double	35.00	16 80
	All yarns before recent amendment, 30 florins.		
	Jute yarns—		
	Single, raw	1.50	72
	Twisted, bleached or colored	5.00	2 40
	Linen goods—		
	Gray packing linen, smooth and coarse, without figures, from hemp or flax, not more than 5-chain threads to 5 millime- ters square, and bags from same, raised from 2 florins to ..	6.00	2 88
	Used bags when returned	Free.	
	Linen goods, raw unfigured, up to 20-chain threads to 5 millime- ters	12.00	5 76
	Same, bleached, colored, or printed—		
	Up to 10 threads to 5 millimeters	20.00	9 60
	11 to 20 threads to 5 millimeters	40.00	19 20
	Same figured—		
	Raw	40.00	19 20
	Bleached, dyed, or printed	80.00	38 40
	(All goods under this head were formerly 40 florins.)		
	Battiste, gauze, and other loose weavings	120.00	57 60
	Manufactures in connection with metal threads	160.00	76 80

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
23	Flax, hemp, and jute manufactures—Continued. Linen goods—Continued. Lace edgings and embroidered woven goods raised from 200 florins to.....	300.00	\$144 00
	Fringes, buttons, and ribbons	80.00	38 40
	Jute weavings— Bag and packing stuff out of jute, raw, unbleached and unfigured, not more than 5 threads to 5 millimeters; bags and sacks out of same.....	6.00	2 88
	Ropes, cords, lines, also bleached or tarred, raised from 3 florins to	5.00	2 40
	Furniture and clothing stuffs, and all weavings of jute in connection with other vegetable weaving material, inclusive of cotton, if containing more threads of jute than of other material; jute weavings embodied or in connection with metallic threads	40.00	19 20
	Jute weavings not especially enumerated, lap-ropes, carpets out of jute, and other weaving material not especially enumerated, also bleached, colored, printed, and figured ..	12.00	5 76
	Cacao yarn.....	Free.	
24	Fruits, preserved: Figs, fresh	3.00	1 44
	Figs, dried	12.00	5 76
	Grapes, dried raisins and currants.....	12.00	5 76
	Lemons, limes, and oranges	8.00	3 84
	Lemons, limes, and oranges preserved in salt-water— Oranges, green and small; lemon and orange peels.....	3.00	1 44
	Dates, pistachio nuts.....	15.00	7 20
	Almonds, dry and peeled.....	15.00	7 20
	Almonds, green and unpeeled	6.00	2 88
	Chestnuts and olives, fresh, dried, or salted	3.00	1 44
	Grapes, fresh for table use, and pine-apples, raised from 5 florins to	10.00	4 80
	Nuts and hazelnuts, dry or peeled, raised from 2.50 florins to	5.00	2 40
	Fruit not especially enumerated, fresh	Free.	
	Same dried or prepared, compressed, cut, powdered, salted, or preserved in vinegar, in barrels, or boiled without sugar, raised from 2.50 florins to	5.00	2 40
	Fruit in cans or bottles hermetically closed and prepared in other manner than above stated	40.00	19 20
25	Furs: Furs, dressed and tanned, but not finished for use— From common furs	10.00	4 80
	From fine furs	50.00	24 00
	Furs finished for use— From common furs raised, from 40 florins to	80.00	38 40
	From fine furs.....	200.00	96 00
	Clothing, not silk, leather gloves, trimmed or lined with fur, to be classed as fine furs finished for use.		
26	Glass: Glass, crude, glass-dust	1.50	72
	Hollow glass, common, unpolished, unpressed, not figured or ground— Natural color, but not white	2.00	96
	White, transparent.....	4.00	1 92
	Hollow glass, natural color, with only ground stoppers or rims or bottoms	4.00	1 92
	Hollow glass, white (transparent), ground, figured, pressed, or cut, massive white glass not especially mentioned	8.00	3 84
	Plate glass— Mirror glass, raw, unpolished, ripped, crude, also roof tiles.....	1.50	72
	Window glass, natural color (green, half or all white), unpolished, not figured	4.00	1 92
	Plate glass of all kinds, polished, figured, framed looking-glasses	12.00	5 76
	Optical glass, flint, crown, zinc, and borax glass, crude, not polished into lenses, in pieces pressed into form of lenses or plates	1.50	72
	Watch crystals, glasses for spectacles, and other optical glasses prepared and polished, raised from 50 florins to	75.00	36 00
	Glass sticks or tubes, without distinction of color, used for manufacture of pearls or buttons.....	1.50	72
	Glass ornaments for chandeliers, glass buttons, corals, pearls, jet, drops, also colored.....	2.00	96
	Glass, colored, excepting the two previous classes, painted, gilded, or silvered, glass stones without setting	12.00	5 76
	Glass ware not especially mentioned in connection with other materials, and not belonging to class of metals, leather, or notions.....	15.00	7 20

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
27	Glucose:		
	Glucose, hard	15.00	\$7 20
	Glucose, fluid	6.00	2 88
28	Glue, raised from 1.60 florins to	6.00	2 88
29	Gunpowder (can only be imported under special permit)	52.50	25 20
30	Hair of all kinds	Free.	
31	Hay and all dry fodder	Free.	
32	Hides and skins green, dry, or salted	Free.	
33	Honey, raised from 1.50 florins to	6.00	2 88
34	Hops and hop-meal (lupulme)	10.00	4 80
35	Ice	Free.	
36	India-rubber manufactures:		
	India-rubber (Kautschuk) and gutta-percha, crude or cleaned	Free.	
	Same dissolved, rubber threads not covered	1.50	72
	Hard rubber in sheets, sticks, or tubes; also polished but not otherwise prepared	6.00	2 88
	Hose and bands of all kinds out of rubber with inlaid weavings or wire, raised from 12 florins to	20.00	9 60
	Shoes of rubber, in connection with other material if not within the class of leather ware or notions	30.00	14 40
	Children's rubber toys	30.00	14 80
	Rubber goods out of soft rubber, excepting those above men- tioned, raised from 20 florins to	30.00	14 40
	Sheets and strips of soft rubber, not vulcanized	10.00	4 40
	Weavings covered with rubber or saturated or connected by in- side layers of rubber	45.00	21 60
	Clothing and other goods manufactured out of materials last mentioned	50.00	24 00
	Elastic weavings and passamenterie wares	70.00	33 60
	Hard-rubber goods, raised from 30 florins to	50.00	24 00
37	Iron and steel manufactures:		
	Crude iron, iron and steel, old, broken, and as waste	.80	38
	Lumps, ingots	1.60	77
	Iron and steel, wrought or rolled into rods— (Faconnirt) shaped	3.50	1 68
	(not faconnirt) not shaped	2.75	1 32
	Railroad rails	2.75	1 32
	Wire—		
	1 millimeter and more diameter	4.00	1 92
	Less than 1 millimeter in diameter to 0.4 millimeter in diameter	5.00	2 40
	Under 0.4 millimeter in diameter	7.00	3 36
	Japanned, coppered, nicked, tinned, or zincd—		
	Of 0.4 millimeter or more in diameter	8.00	3 84
	Under 0.4 millimeter in diameter	10.00	4 80
	Japanned	12.00	5 76
	Wire of 1.5 millimeters and more in diameter	4.00	1 92
	Wire less than 1.5 millimeters and up to 0.5 millimeter in diameter	5.00	2 40
	Wire less than 0.5 millimeter in diameter	6.00	2 88
	Wire, japanned, coppered, tin or zinc plated	8.00	3 84
	Iron-ware, common cast-iron:		
	Crude, unworked	2.00	96
	Polished or coarsely painted, or partly polished and smoothed	4.00	1 92
	Polished, planed, coppered, tinned, zincd, or finely painted	8.50	4 22
	Common iron and steel ware out of malleable cast-iron, cast-steel, wrought-iron, or steel:		
	Crude, also cleaned	4.00	1 92
	Coarsely printed or partially polished, turned, also bolts and nuts	5.00	2 40
	Polished, planed, turned, coppered, tinned, zincd, or finely painted	8.50	4 22
	(Same duty on all wares above mentioned, if connected with wood.)		
	Wrought-iron pipes, scythes, sickles also connected with wood, nails (except horseshoe nails), wire-nails, raised from 5 florins to	6.50	3 12
	Perforated or sunken sheet-iron, and wares out of	6.00	2 88
	Boilers, steam-boilers	8.50	4 08
	Hay and dung forks, hoes, shovels (rough and only partially polished, also in connection with wood), weighing 2 kilo- grams each, raised from 6.50 florins to	7.00	3 36
	Tin-ware not especially enumerated, painted, tin or zinc plated or copper-plated	15.00	7 20
	Wire rope, wire brushes, sieves, and coarse wire goods	8.00	3 84
	Block saws, files, and rasps, 25 centimeters long or longer, augers, hammers, axes, tongs, nippers, &c., hay and dung forks, except those above-mentioned, scales and parts of, locks, keys, &c., horseshoe nails, tacks, screws, at least 5 milli- meters in diameter, also in connection with wood, crude, parts of cutlery unfinished, pressed or wrought	10.00	4 80

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
37	Iron and steel manufactures—Continued. Common iron and steel ware out of malleable cast-iron, cast-steel, wrought-iron, or steel: Polished saws, files, and rasps, under 25 centimeters long, planing and chiseling irons, awls, coarse knives and scissors for mechanics and agricultural use, tools of all kinds weighing each less than 500 grammes, screws under 5 millimeters in diameter; all these in connection with other material if they do not come within the class of rubber, leather, or metal goods or notions.....	20.00	\$9 60
	Light, artistic, and ornamental castings, wire goods not especially enumerated, steel strings—all these if not within the class of rubber, leather, or metal goods or notions.....	15.00	7 20
	Polished, japanned, enamelled fire-arms (with exception of hand arms), and parts of fire-arms, weavers' combs, scrapers, toys, skates, furniture upholstered or covered and finely ornamented.....	25.00	12 00
	Cutlery, hand (pocket) fire-arms, writing pens, springs, except watch and carriage springs.....	50.00	24 00
	Pins, crochet and knitting needles, hooks and eyes, buckles, buttons, fish-hooks, thimbles, &c., needles 5 centimeters long and over.....	50.00	24 00
	Needles less than 5 centimeters long.....	100.00	48 00
38	Jewelry, jewels: Gold and silver ware, jewelers' ware, and all wares not especially enumerated and consisting in whole or in part of precious metal, genuine or imitation pearls or corals, jewels in gold, silver, or wire setting, articles made out of genuine gilded or silvered leonine ware.....	300.00	144 00
	Genuine gold leaf, wire of precious metal, articles not specially enumerated made out of base metal gold or silver plated, or inlaid with gold or silver, genuine gilded or silver-plated leonine ware, imitation pearls, artificial teeth, wigs, articles made in imitation of leonine ware, frames for opera glasses, spectacles, &c.....	100.00	48 00
	Articles made of ivory, mother-of-pearl, tortoise shell, or amber.....	100.00	48 00
	Gents' and ladies' ornaments out of base metal, nicked, plated, bracelets and necklaces of glass beads.....	50.00	24 00
	Arm and necklaces of stone and steel beads and metal beads, gilded or silvered.....	50.00	24 00
	Precious stones, genuine, corals, genuine and imitation, polished, cut, or prepared in any way, genuine pearls, all if not set.....	24.00	11 02
39	Lamps: No duty on lamps as such; rate of duty according to material, as notions.....	50.00	24 00
	Lamp cylinders.....	4.00	1 92
40	Lead and manufactures of: Lead and lead alloy— Crude, also old, broken and as waste; raised from 1 florin to.....	2.00	96
	Cast pipes, sheets, balls, shot, lead wire, type and stereotype plates, raised from 4.50 florins.....	5.00	2 40
41	Leather and manufactures of: a. Leather, common, <i>i. e.</i> , not embraced within <i>b</i> and <i>c</i> , black horse leather, drawn or grained, in whole or half hides.....	9.00	4 32
	Sheep or goat skins, not white or colored.....	6.00	2 88
	b. Sole leather and waste of same.....	18.00	8 64
	c. Leather, fine, <i>i. e.</i> , black leather with exception of that described under <i>a</i>) glove leather, cordovan, morocco leather, saffian, and all lakked, colored, or bronzed leather, figured and pressed, leather parchment.....	18.00	9 32
	d. Leather ware, common, <i>i. e.</i> , goods out of common leather and of black, drawn, or grained neat's or horse leather or coarse oilcloth, saddles, pocket-makers' wares out of haired leather, coarse canvas, sail cloth, and other coarse linen material, and girths.....	25.00	12 00
	e. Leather ware, fine, <i>i. e.</i> , out of white, or chamois leather, parchment, or out of fine leather classed under <i>c</i> and out of oilcloth not especially described, saddlers' and pocketbook manufacturers', wares made out of material described under <i>c</i> , bleached or colored.....	35.00	16 80
	(Same duty also in connection with other material, if wares under <i>d</i> and <i>e</i> are not classed under higher tariff on rubber, metal or notions.) Shoes of all kinds, of leather or partly leather, if not classed under notions.....	35.00	16 80
	Glove leather or cut patterns for gloves, also in connection with weavings; surgical bandages.....	50.00	24 00
42	Lime and cement: Lime, ground or slaked.....	.20	09
	Lime, raw.....	Free.	
	Cement.....	.50	24

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
43	Malt liquors:		
	In barrels	3.00	\$1 44
	In bottles or jugs	8.00	3 84
44	Surgical instruments, of whatever material	Free.	
45	Naval stores:		
	Rosin	.50	24
	Tar	.20	09
	Turpentine	1.50	72
	Pitch	.50	24
	Oil cake and meal	Free.	
46	Oils:		
47	Animal oils and fats, fats, and fat mixtures not specially enumer- ated, fish oil, sperm oil	1.00	48
	Animal products not especially enumerated	Free.	
	Fat oils in bottles or jugs	10.00	4 80
	Mineral oils—		
	Crude, not fit for illuminating purposes without refinement—		
	Heavy of not more than 830° specific gravity under tem- perature of 12° R. raised from 1.10 florins to	1.42	63
	Light, of and under 830° specific gravity. (NOTE BY THE DEPARTMENT.—Consul-General Jussen has omitted to insert the rate of duty applying to this oil. Under the old tariff it was charged 2 florins, or 96 cents.)		
	Crude, fit for illuminating purposes without refinement	10.00	4 80
	(NOTE.—This is one of the inexplicable descriptions of the Austrian tariff.)		
	Refined and half-refined, heavy, over 880° raised from 1.90 florins to	3.00	1 44
	(NOTE BY CONSUL-GENERAL JUSSEN.—This tariff is hereafter to be applied to the partially refined Russian petroleum, heretofore imported under a No. 1, at 1.10 florins.)		
	Light, of and under 880° specific gravity	10.00	4 80
	Refined Russian and American petroleum: Refined mineral oils, intended for industrial purposes as solvents under 770° specific gravity	3.00	1 44
	Vegetable oils—		
	Palm and cocoanut oil	1.00	48
	Palm and cocoanut oil imported by sea	.50	24
	Olive oil, poppy, sesame, peanut, sunflower, and cotton oil, in barrels, bladders, or leather bags, raised from 4 florins to ..	8.00	3 84
	Rapeseed oil, linseed oil, and other fat oils not specially enumer- ated, in barrels, bladders and leather bags, with the excep- tion of oil varnishes, raised from 2 florins to	4.00	1 92
	Oils, fat, in bottles or jugs	10.00	4 80
	Volatile oils—		
	Amber, hartshorn, rubber, laurel, rosmarin, and juniper oil	6.00	2 88
	All volatile oils not especially enumerated	25.00	12 00
	Perfumed oils, fats, and vinegars, in packages of not less than 5 kilograms	10.00	4 80
	Turpentine, pitch, and rosin oil	1.50	72
48	Paraffine and wax:		
	Paraffine, unrefined, paraffine butter, ceresin, and spermaceti	4.00	1 92
	Wax, inclusive of vegetable wax, formerly free, under recent amendment—		
	In natural state	5.00	2 40
	Prepared, bleached, colored	10.00	4 80
49	Paints:		
	Tar paints and artificially-prepared organic coloring matter	10.00	4 80
	All paints in capsules, bladders, and boxes	24.00	11 52
50	Paper, manufactures of:		
	Paper pulp, bleached or unbleached—		
	Of rags	Free.	
	Of wood, straw-esparto, and similar fibers	.50	24
	Blotting-paper, coarse packing-paper, uncolored, ordinary paste- board, raised from 1 florin to	3.00	1 44
	Packing-paper, smooth or colored, lackered or tarred	3.00	1 44
	Pasteboard, enameled and imitation, of leather, emery, glass, and sand-paper	3.00	1 44
	Paper, common, unsized (coarse, gray, half white, and colored), all unsized printing-paper	5.00	2 40
	Paper not particularly mentioned	5.00	2 40
	Lithographed, printed, or lined paper for labels, bills of lading, bills, &c., drawing-paper, gelatine-paper, parchment-paper, printers' pasteboard, many-colored paper	7.00	3 36
	Gold and silver paper and paper with gold and silver figures, also bronzed paper, pressed or perforated paper, strips of same; paper and pasteboard lined with cotton	15.00	7 20
	Wall-paper, raised from 15 florins to	25.00	12 00

Customs duties collected under the tariff laws of Austria-Hungary, &c.—Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
50	Paper, manufactures of—Continued.		
	Moldings of paper pulp, asphalt, or similar material—		
	Not painted or lackered, also in connection with wood, raised from 2 florins to	5. 00	\$2 40
	Same in connection with other material if not within class of notions	15. 00	7 20
	Paper ware, i. e., made out of paper pulp or wood fiber, also in connection with other material, if not within the class of notions	15. 00	7 20
	Luxury paper ware, fine boxes, labels, and vignettes with different colors (chromo-lithographs), paper toys, paper collars, &c.	30. 00	14 40
	Paper book binding, linen or cotton lined, also in connection with other material, if not within class of notions, &c.	30. 00	14 40
	Playing cards	60. 00	28 80
	(Playing-cards also pay a consumption tax.)		
51	Plated ware, metal ware, very fine articles of luxury, ornamented or nicked, German-silver goods, britannia metal, bronze metal, and similar plating, also in connection with other material if not within the class of notions, raised from 30 florins to	50. 00	24 00
52	Provisions:		
	Meats, fresh	6. 00	2 88
	Meats, salt, dried, or smoked	6. 00	2 88
	Oleomargarine	10. 00	4 80
	Lard	16. 00	7 68
	Butter	10. 00	4 80
	Cheese raised from 10 florins to	20. 00	9 60
53	Quicksilver	Free.	
54	Seeds	. 50	24
55	Soap:		
	Common	4. 00	1 92
	Fine, perfumed	15. 00	7 20
56	Spirits:		
	Alcohol and spirits of all kinds	24. 00	11 52
	Cordials, punch extract, arrac, rum, and cognac	40. 00	19 20
57	Starch	6. 00	2 88
58	Sugar:		
	Cane sugar—		
	Under Holland standard, No. 19	15. 00	7 20
	Of Holland standard, No. 19 and over	20. 00	9 60
	Refined sugar	20. 00	9 60
	Solutions of sugar, starch sugar, and hard glucose	15. 00	7 20
	Molasses—		
	Sirup, starch sugar, and glucose in fluid state, molasses	6. 00	2 88
	NOTE.—Molasses for distilleries now in operation admitted up to August 1, 1888, at	. 25	12
59	Tin, crude, old, broken, and as waste	Free.	
	Tin, in bars, sheets, wires, or pipes, cast tin, course not finished: also in connection with common woodwork and bars and sheets of iron	4. 00	1 92
60	Tobacco:		
	Leaf, raw, unprepared, ribs, and tobacco brim (can only be imported under special permission)	21. 00	10 08
	Cigars and cigarettes and all kinds of smoking tobacco and snuff (can only be imported under special permission)	52. 50	25 20
	(NOTE BY CONSUL-GENERAL JUSSEN.—The permission is never granted except to private individuals for private use and for very small quantities, the trade in tobacco and cigars being a monopoly of the Government.)		
61	Vegetables:		
	Fresh	Free.	
	In hermetically closed cans, jars, or bottles	40. 00	19 20
	Dried or prepared, compressed, pulverized, salted, or in vinegar, raised from 2.50 florins to	5. 00	2 40
62	Wood	Free.	
	Wood:		
	Manufactures of common wooden ware and coarse cooper or cabinet ware, planed wagon-maker's work, turning-lathes, rollers, presses, spinning-wheels and weaving-looms, brush brooms, agricultural, garden, and kitchen implements—		
	If not painted, varnished, or polished, nor in connection with other material, raised from 1 florin to	1. 50	72
	Unfinished, but trimmed or in connection with iron or base metal	3. 00	1 44
	Painted, varnished, lackered, or polished or in connection with cane, straw, or basket work, base metal, glass, stone plates, or common leather, raised from 3 florins to	5. 00	2 40
	Furniture and parts of—		
	Fine, unfinished, raised from 3 florins to	5. 00	2 40

Customs duties collected under the tariff laws of Austria-Hungary, &c. —Continued.

No.	Tariff classification.	Tariff rates of duty, in gold florins.	Equivalent in United States money.
[62	Wood—Continued.		
	Furniture and parts of—Continued.		
	Painted, varnished, lackered, polished, or in connection with bast, can, straw or basket work, base metal, glass and stone plates, or common leather, raised from 3 florins to...	5.00	\$2 40
	Upholstered furniture, without covering.....	15.00	7 20
	Upholstered furniture, with covering, raised from 20 florins to...	30.00	14 40
	Fine wooden-ware, <i>i. e.</i> , fine turned or carved ware, wooden, bronze, gilded, or silvered, or finely painted wooden- ware, all wares of wood not specially enumerated, wares of other vegetable covering material.....	15.00	7 20
	Basket-work, common.....	5.00	2 40
	Basket-work, fine, raised from 20 florins.....	50.00	24 00
	Wooden-ware, with fine inlaid work, raised from 20 florins to...	30.00	14 40
	Fourniers and parquette floors and parts thereof—		
	Unfinished.....	1.50	72
	Colored or polished.....	3.00	1 44
	Fourniers, inlaid.....	12.00	5 76
	Wooden toys—		
	Coarse, only planed, carved, or turned in the raw, raised from 1 florin to.....	5.00	2 40
	All others.....	20.00	9 60
63	Wool.....	Free.	
64	Zinc:		
	Crude, old, broken, or waste (before amendment, free).....	1.00	48
	In bars and sheets, raised from 1.50 florins to.....	3.00	1 44

Dated at Vienna, May 25, 1886.

EDMUND JUSSEN,
Consul-General.

The full tariff of Austria-Hungary was printed in Consular Reports
No. 21, July, 1882, p. 493.]

BELGIUM.

Customs duties collected on the following articles under the tariff laws of Belgium.

[Prepared by Consul John N. Steuart.]

Number.	Articles.	Unit.	Duty in Bel- gian cur- rency.	Duty in United States currency.
1	Agricultural implements:			
	Cast-iron	100 kilos	2 francs.....	\$0 38 $\frac{3}{4}$
	Wrought iron or steel	do	4 francs.....	77 $\frac{1}{2}$
	Copper or other material	do	12 francs.....	2 31 $\frac{1}{2}$
	Wood	Ad valorem.	10 per cent..	
2	Animals:			
	Cattle		Free	
	Hogs		do	
	Horses		do	
	Mules		do	
	Sheep		do	
	All others		do	
3	Art works		do	
4	Bark and extracts		do	
5	Blacking		do	
6	Bones, hoofs, horns		do	
7	Books, maps, engravings			
8	Brass:			
	Bar or sheet	100 kilos	10 francs...	1 93
	Manufactures of	Ad valorem.	10 per cent..	
9	Breadstuffs:			
	Barley		Free	
	Bread and biscuits		do	
	Indian corn		do	
	Oats		do	
	Rye		do	
	Wheat		do	
	Flour		do	
10	Bricks		do	
11	Brooms and brushes	Ad valorem.	10 per cent..	
12	Candles	do	do	
13	Carriages	do	do	
14	Cars (horse, railroad, steam):			
	Cast-iron	100 kilos	2 francs.....	38 $\frac{3}{4}$
	Wrought iron or steel	do	4 francs.....	77 $\frac{1}{2}$
	Copper or other material	do	12 francs.....	2 31 $\frac{1}{2}$
15	Chemicals		Free	
16	Clocks and watches		do	
17	Coal		do	
18	Copper:			
	Ore		do	1 93
	Ingots, bar, and sheet	100 kilos	10 francs.....	
	Manufactures of	Ad valorem.	10 per cent..	
	Except sheet, nails, and bolts for coppering of ves- sels.		Free	
19	Cotton		Free	
	Cotton, manufactures of, unbleached:			
	First class, weighing 11 kilograms and more per 100 square meters—			
	Of 35 threads and less per square centimeter.....	100 kilos	50 francs.....	9 65
	Of 36 threads and more per square centimeter.....	do	72 francs.....	13 89 $\frac{1}{2}$
	Second class, weighing from 7 to 11 kilograms, ex- clusive, per 100 square meters—			
	Of 35 threads and less per square centimeter.....	do	60 francs.....	11 58
	Of 36 threads to 43 per square centimeter.....	do	100 francs....	19 20
	Of 44 threads and over per square centimeter	do	180 francs....	34 74
	Third class, weighing from 3 to 7 kilograms, exclu- sive, per 100 square meters—			
	Of 27 threads and less per square centimeter.....	do	80 francs.....	15 44
	Of 28 threads to 35 per square centimeter.....	do	120 francs....	23 16
	Of 36 threads to 43 per square centimeter.....	do	190 francs....	36 67
	Of 44 threads and more per square centimeter.....	do	300 francs....	57 90
	Cotton, bleached:			
	First class, weighing 11 kilograms and more per 100 square meters—			
	Of 35 threads and less per square centimeter	do	57.50 francs..	11 09 $\frac{1}{2}$
	Of 36 threads to more per square centimeter	do	82.50 francs..	15 92 $\frac{1}{2}$

Customs duties collected on the following articles under tariff laws of Belgium—Continued.

Number.	Articles.	Unit.	Duty in Belgian currency.	Duty in United States currency.
19	Cotton, bleached—Continued.			
	Second class, weighing from 7 to 11 kilograms, exclusive, per 100 square meters—			
	Of 35 threads and less per square centimeter	100 kilos	69 francs....	\$13 31 ⁷ / ₈
	Of 36 threads to 43 per square centimeter	do	115 francs....	22 19 ¹ / ₈
	Of 44 threads and more per square centimeter	do	207 francs....	39 95 ¹ / ₈
	Third class, weighing from 3 to 7 kilograms, exclusive, per 100 square meters—			
	Of 27 threads and less per square centimeter	do	92 francs....	17 75 ³ / ₈
	Of 28 threads to 35 per square centimeter	do	138 francs....	26 82 ⁷ / ₈
	Of 36 threads to 43 per square centimeter	do	218.50 francs	42 17 ³ / ₈
	Of 44 threads and more per square centimeter	do	345 francs....	66 58 ¹ / ₈
	Cotton, dyed:			
	First class, weighing 11 kilograms and more per 100 square meters—			
	Of 35 threads and less per square centimeter	do	75 francs....	14 47 ¹ / ₈
	Of 36 threads and more per centimeter	do	97 francs....	18 72 ¹ / ₈
	Second class, weighing from 7 to 11 kilograms, exclusive, per 100 square meters—			
	Of 35 threads and less per square centimeter	do	85 francs....	16 40 ¹ / ₈
	Of 36 threads to 43 per square centimeter	do	125 francs....	24 12 ¹ / ₈
	Of 44 threads and more per square centimeter	do	205 francs....	39 56 ¹ / ₈
	Third class, weighing from 3 to 7 kilograms, exclusive, per 100 square meters—			
	Of 27 threads and less per square centimeter	do	105 francs....	20 26 ¹ / ₈
	Of 28 threads to 35 per square centimeter	do	145 francs....	27 98 ¹ / ₈
	Of 36 threads to 43 per square centimeter	do	215 francs....	41 49 ¹ / ₈
	Of 45 threads and more per square centimeter	do	325 francs....	62 72 ¹ / ₈
	Cotton, printed	Ad valorem.	10 per cent..	.....
	Cotton thread, raw and bleached, length per $\frac{1}{2}$ kilometer being as follows—			
	20,000 meters or less	100 kilos	15 francs ...	2 89 ¹ / ₈
	20,000 meters to 30,000 meters	do	20 francs....	3 86
	30,000 meters to 40,000 meters	do	30 francs....	5 79
	40,000 meters to 65,000 meters	do	40 francs....	7 72
	More than 65,000 meters	do	10 francs....	1 93
	Dyed or warped, length per $\frac{1}{2}$ kilometer being as follows:			
	20,000 meters or less	do	25 francs....	4 82 ¹ / ₈
	20,000 meters to 30,000 meters	do	30 francs....	5 79
	30,000 meters to 40,000 meters	do	40 francs....	7 72
	40,000 meters to 65,000 meters	do	50 francs....	9 65
	More than 65,000 meters	do	10 francs....	1 93
20	Earthen, stone, and china ware	Ad valorem.	10 per cent..	.....
21	Fertilizers .....	.....	Free .....	.....
22	Fish .....	.....	do .....	.....
23	Flax, hemp, and jute .....	.....	do .....	.....
	Flax, hemp, and jute, manufactures of:			
	Hand and spindle made laces .....	.....	do .....	.....
	All other tissues (including all mixed tissues in which flax, hemp, or jute predominate in weight)	Ad valorem.	10 per cent..	.....
	Thread .....	.....	Free .....	.....
24	Fruits:			
	Fresh apples .....	.....	Free .....	.....
	Almonds	100 kilos	35 francs....	6 75 ¹ / ₈
	Lemons, oranges, and figs	do	9 francs....	1 73 ⁷ / ₈
	Prunes and currants	do	25 francs....	4 82 ¹ / ₈
	All others	Ad valorem.	10 per cent..	.....
	Preserved with brandy	100 kilos	80 francs....	15 44
	Preserved with sugar	do	25 francs....	4 82 ¹ / ₈
	Preserved in any other way	do	10 francs....	1 93
25	Furs	do	30 francs....	5 79
26	Glass, broken .....	.....	Free .....	.....
	Glass, manufactures of:			
	Common, bottles, &c. (or 10 per cent. ad valorem at the choice of importer).	100 kilos	1 franc.....	19 ³ / ₈
	Good quality	Ad valorem.	10 per cent..	.....
	Mirror and window glass	do	do .....	.....
27	Glucose .....	.....	Free .....	.....
28	Glue .....	.....	do .....	.....
29	Gunpowder	100 kilos	15 francs....	2 89 ¹ / ₈
30	Hair .....	.....	Free .....	.....
31	Hay .....	.....	do .....	.....
32	Hides and skins:			
	Raw .....	.....	do .....	.....
	Goat and sheep skins, tanned, but not finished, also kid unfinished.	100 kilos	10 francs....	1 93
	Dyed, varnished, lacked and moroccoed, also prepared furs.	do	30 francs....	5 79

Customs duties collected on the following articles under tariff laws of Belgium—Continued.

Number.	Articles.	Unit.	Duty in Belgian currency.	Duty in United States currency.
32	Hides and skins—Continued.			
	Otherwise prepared	100 kilos	15 francs....	\$2 89½
	Manufactures of	Ad valorem.	10 per cent..	.....
33	Honey	100 kilos	10 francs....	1 93
34	Hops		Free .....	.....
35	Ice		do .....	.....
36	India-rubber:			
	Raw		do .....	.....
	Manufactures of	Ad valorem.	10 per cent..	.....
37	Iron and steel:			
	Pig-iron	100 kilos	0.50 franc....	09 65 ⁵ / ₈
	Manufactures of cast iron	do	2 francs....	38 ³ / ₈
	Iron, wrought or in sheets	do	1 franc....	19 ³ / ₈
	Manufactures of wrought iron	do	4 francs....	77 ¹ / ₈
	Cast-steel, rough	do	0.50 franc....	09 65 ⁵ / ₈
	Steel in bars, sheets, or wire	do	1 franc....	19 ³ / ₈
	Steel bars, finished at the ends	do	4 francs....	77 ¹ / ₈
38	Jewelry (gold or silver thimbles, spectacles, and eye-glasses, free).	Ad valorem.	5 per cent..	.....
39	Lamps:			
	Cast iron	100 kilos	4 francs....	77 ¹ / ₈
	Wrought iron or steel	do	6 francs....	1 15½
	All others	Ad valorem.	10 per cent..	.....
40	Lead		Free .....	.....
	Manufactures	Ad valorem.	10 per cent..	.....
41	Leather, manufactures of	Ad valorem.	10 per cent..	.....
42	Lime and cement		Free .....	.....
43	Malt liquors:			
	In barrels	Hectoliter ..	6 francs....	1 15½
	In bottles	do	7 francs....	1 35 ¹ / ₈
44	Medical instruments		Free .....	.....
45	Naval stores: Rosin, tar, turpentine, and pitch		do .....	.....
46	Oil cake and meal		do .....	.....
47	Oils: Animal, mineral, and vegetable		do .....	.....
48	Paraffine and wax		do .....	.....
49	Paints		do .....	.....
50	Paper, manufactures of:			
	Wall-paper	100 kilos	8 francs....	1 54½
	All others	do	4 francs....	77 ¹ / ₈
51	Plated ware	Ad valorem.	10 per cent..	.....
52	Provisions:			
	Fresh meats, salt, oleomargarine, lard, butter, and cheese.		Free .....	.....
53	Quicksilver		do .....	.....
54	Seeds		do .....	.....
55	Soap	100 kilos	6 francs....	1 15½
56	Spirits:			
	Wines (pay only excise duty on barrels and in bottles 23 francs, or \$4.439 per hectoliter).			
	Spirits (all kinds), in barrels, at 50 degrees or less..	Hectoliter ..	100 francs...	19 30
	Spirits and liquors, in bottles	do	200 francs...	38 60
	Spirits (all kinds), in barrels, for every degree over 50 degrees.	do	2 francs....	38½
	Other liquors, including toilet waters prepared with alcohol.	do	134 francs...	25 86½
57	Starch	do	Free .....	.....
58	Sugar:			
	Raw, first class, Nos. 15 to 18, inclusive, pay only excise duty.	100 kilos	48.07 francs.	9 27½
	Raw, second class, Nos. 10 to 15, exclusive, pay only excise duty.	do	45 francs....	8 68½
	Raw, third class, Nos. 7 to 10, exclusive, pay only excise duty.	do	40.91 francs.	7 89 ⁵ / ₈
	Raw, fourth class, under No. 7, pay only excise duty.	do	34.26 francs.	6 61 ² / ₈
	Molasses containing 50 per cent. or more of saccharine matter, and manufactured sirups containing crystallizable sugar, are classed as raw sugar and submitted to an excise duty.			
	Refined—			
	Crystallized	do	54.70 francs.	10 55 ⁷ / ₈
	In loaves	do	51.13 francs.	9 86 ⁸ / ₈
	Over No. 18	do	do	9 86 ⁸ / ₈
	(Caramalized or burnt sugars, also other sirups than those obtained through the manufacture or refining of sugar, further sugar plums, burnt sugar-almonds, lozenges, and other preparations of sugar of similar nature are submitted to the same rate of duty as refined sugar.)			

Customs duties collected on the following articles under tariff laws of Belgium—Continued.

Number.	Articles.	Unit.	Duty in Belgian currency.	Duty in United States currency.
58	Sugar—Continued. Sirups and molasses— Molasses, uncrystallizable, being obtained through the manufacture or the refining of sugar, containing less than 50 per cent. of saccharine matter. Those imported for distilling purposes.....	100 kilos	15 francs....	\$2 89½
59	Tin: In sheets..... Manufactures of.....	Ad valorem.	Free	Free
60	Tobacco: Leaf..... Ribs (côtes)..... Cigars..... Cigarettes and other manufactures.....	100 kilos do do do	70 francs.... 15 francs.... 300 francs... 100 francs...	13 51 2 89½ 57 90 19 30
61	Vegetables	do	Free	Free
62	Wood: Oak or walnut..... Building and cabinet oak and walnut excepted, in the bark or unsawn. Sawn, more than 5 centimeters thick..... Sawn, 5 centimeters thick or less..... Other woods, including those cut for staves and boxes, oak and walnut excepted. Common broom-handles..... Casks..... All other manufactures of.....	Cubic meter. do do do do do do Ad valorem.	1 franc..... 3 francs.... 6 francs.... 9 francs.... Free	19 ¾ 57 ¾ 1 15 ¾ 1 73 ¾ Free
63	Wool: Raw..... Manufactures of— Shawls and scarfs of India cashmere..... All others, including mixed tissues, where wool predominates in weight. (On the last named the importer has the option to pay 260 francs, or \$50.18 per 100 kilograms.)	Ad valorem. do	Free	Free
64	Zinc.....	do	Free	Free

DENMARK.

Customs duties of Denmark.

[Prepared by Consul Henry B. Ryder.]

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
1	Agricultural implements (at owner's option), 10 per cent. ad valorem:		<i>Kronen.</i>		
	Or if made of coarse iron or steel	100 lbs ..	2. 10	Cwt	\$0. 5712
	Or of polished iron, or steel, or wood	do	6. 25	do	1. 7001
2	Animals:				
	Cattle, hogs, horses, mules, sheep, and all others		Free.		
3	Art works		Free.		
4	Bark:				
	For tanners' or dyers' use		Free.		
	For druggists' use	100 lbs ..	4. 20	Cwt	1. 1424
	Extracts of, for dyers' use	do	10. 25	do	2. 7882
5	Blacking	100 lbs. gross.	4. 20	do	1. 1424
6	Bones, hoofs, horns, &c.:				
	Raw		Free.		
	Burnt, for dyers' use	100 lbs ..	2. 10	Cwt	0. 5712
	Manufactures of	do	33. 33	do	9. 0672
7	Books:				
	Printed		Free.		
	Of writing paper, clean	100 lbs ..	33. 33	Cwt	9. 0672
	Maps, engravings, &c.—				
	Without printed text	do	33. 33	do	9. 0672
	With printed text	do	16. 66	do	4. 5336
8	Brass:				
	Sheets, nails, bars	do	6. 25	do	1. 7001
	Manufactures of, polished	do	33. 33	do	9. 0672
	All other	do	16. 66	do	4. 5336
9	Breadstuffs:				
	Barley, Indian corn, oats, rye, wheat, flour		Free.		
	Bread and buscuit, without sugar		Free.		
	Bread and buscuit, with sugar	100 lbs ..	14. 66	Cwt	3. 9895
10					
11	Brooms and brushes:				
	With coarse wood or metal	100 lbs ..	8. 33	Cwt	2. 2668
	Others	do	33. 33	do	9. 0672
12	Candles:				
	Of tallow	do	6. 25	do	1. 7001
	Others	do	12. 50	do	3. 4002
13	Carriage, horse-cars:				
	Covered in or partly covered	Each	60. 00	Each	16. 0800
	Others	do	24. 00	do	6. 4320
	Cars, &c.	100 lbs ..	6. 25	Cwt	1. 7001
14	Cars (railroad or steam):				
	For passengers or tenders	Each	300. 00	Each	80. 4000
	Others	do	100. 00	do	26. 8000
	Locomotives	do	1,000. 00	do	268. 0000
15	Chemicals:				
	For druggists	100 lbs ..	4. 20	Cwt	1. 1424
	Coarse		Free.		
16	Clocks and watches:				
	For pockets	Each	1. 00	Each	0. 2680
	For house use	100 lbs ..	33. 33	Cwt	9. 0672
	For tower use	do	16. 66	do	4. 5336
17	Coals, per barrel, of about	3 cwt	0. 15	Ton of 20 cwt.	0. 2680
18	Copper:				
	Ore, ingots		Free.		
	Bars, sheets	100 lbs ..	6. 25	Cwt	1. 7001
19	Cotton:				
	Raw, &c.		Free.		
	Manufactures of—				
	Coarse	100 lbs ..	12. 50	Cwt	3. 4002
	Others	do	25. 00	do	6. 8004
	Printed	do	66. 66	do	18. 1344
	Printed, fine	do	100. 00	do	26. 8000

Customs duties of Denmark—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
	Cotton yarn:		<i>Kronen.</i>		
	Fancy, colored.....	100 lbs..	50.00	Cwt....	\$13.6008
	Uncolored.....	do.....	6.25	do.....	1.7001
	Colored.....	do.....	16.66	do.....	4.5336
20	Earthen, stone, china ware:				
	Without decorations.....	do.....	6.25	do.....	1.7001
	With decorations.....	do.....	16.66	do.....	4.5336
	Fancy, colored.....	do.....	33.33	do.....	9.0672
21	Fertilizers.....		Free.		
22	Fish:				
	Alive and uncured.....		Free.		
	Dried or salted, &c.....	100 lbs..	6.25	Cwt....	1.7001
23	Flax, hemp, jute:				
	Unbleached or unmanufactured.....		Free.		
	Manufactures of, same as per No. 19.....		Free.		
24	Fruits:				
	Preserved in vinegar or salt.....	100 lbs..	2.10	Cwt....	0.5712
	Preserved in sugar or cans.....	do.....	14.66	do.....	3.9895
	Dried.....	do.....	1.66	do.....	0.4514
	Oranges, &c., fresh.....	do.....	3.15	do.....	0.8568
	Grapes, &c., fresh.....	do.....	14.66	do.....	3.9895
25	Furs:				
	Ready-made.....	do.....	33.33	do.....	9.0672
	Others.....	do.....	25.00	do.....	6.8004
26	Glass:				
	Bottles.....	do.....	3.15	do.....	0.8568
	Glass wares in connection with metal.....	do.....	33.33	do.....	9.0672
	In panes, under 800 square inches.....	do.....	16.66	do.....	4.5336
	In panes, from 800 to 1,800 square inches.....	do.....	25.00	do.....	6.8004
	In panes, above 1,800 square inches.....	do.....	33.33	do.....	9.0672
	All other glasswares.....	do.....	14.66	do.....	3.9895
27	Glucose.....	do.....	8.33	do.....	2.2668
28	Glue.....	do.....	6.50	do.....	1.7681
29	Gunpowder.....	100 lbs. gross.	8.33	do.....	2.2668
30	Hair:				
	Raw or unmanufactured.....		Free.		
	Manufactured (human).....	100 lbs..	400.00		107.2000
31	Hay.....		Free.		
32	Hides and skins:				
	Raw.....		Free.		
	Manufactured or dyed.....	100 lbs..	25.00	Cwt....	6.8004
	Skins for gloves.....	do.....	150.00	do.....	40.8000
33	Honey:				
	Brown.....	do.....	4.75	do.....	1.2921
	White.....	do.....	8.50	do.....	2.3121
34	Hops.....	do.....	14.66	do.....	3.9895
35	Ice, raw, 10 per cent. ad valorem.				
36	India-rubber manufactures:				
	Blocks, sheets, strops, &c.....	do.....	10.25	do.....	2.7882
	Others manufactured.....	do.....	33.33	do.....	9.0672
37	Iron:				
	Steel for melting.....		Free.		
	Manufactures—				
	Bars, rails, hoops.....	100 lbs..	0.50	Cwt....	0.13600
	Galvanized and others—				
	Coarse.....	do.....	2.10	do.....	0.5712
	Fine.....	do.....	6.25	do.....	1.7001
	Fancy.....	do.....	33.33	do.....	9.0672
38	Jewelry.....	do.....	33.33	do.....	9.0672
39	Lamps, according to the material of which same is made.				
40	Lead:				
	For melting.....		Free.		
	Sheets, bars, shots, wire, &c.....	100 lbs..	2.10	Cwt....	0.5712
	Others, polished or silvered, &c.....	do.....	33.33	do.....	9.0672
	Others, coarse.....	do.....	16.66	do.....	4.5336
41	Leather. (See No. 32, Hides and Skins.)				
42	Lime and cement.....		Free.		
43	Malt liquors:				
	In bottles.....	Pot....	0.50	Gallon..	0.6700
	In casks or jars.....	do.....	0.30	do.....	0.4020
44	Medical instruments.....	100 lbs..	33.33	Cwt....	9.0672
45	Naval stores:				
	Rosin.....	do.....	0.50	do.....	0.1360
	Tar.....	Barrel..	1.20	Barrel..	0.3216
	Turpentine and pitch.....	100 lbs..	0.50	Cwt....	0.1360
46	Oil cake and meal.....		Free.		

Customs duties of Denmark—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
47	Oils:		<i>Kron m.</i>		
	Animal (perfumed)	100 lbs.	33.33	Cwt	\$9.0672
	Mineral, and others	do	4.10	do	1.1153
	Vegetable (linseed, &c.)		Free.		
48	Paraffine and wax	100 lbs.	6.25	Cwt	1.7001
	Wax manufactures	do	33.33	do	9.0672
49	Paints:				
	Indigo, cochineal	do	29.20	do	7.9430
	Others, in oil or varnish	do	10.25	do	2.7882
	Other	do	2.10	do	0.5712
50	Paper:				
	Coarse	do	1.05	do	0.2856
	Fine	do	5.10	do	1.3873
	Manufactures, decorated	do	16.66	do	4.5336
	Manufactures, fancy	do	33.33	do	9.0672
51	Plated ware	do	33.33	do	9.0672
52	Provisions:				
	Meat, all sorts, in usual packing		Free.		
	Meat, all sorts, in cans	100 lbs.	14.66	Cwt	3.9895
	Oleomargarine	do	6.25	do	1.7001
	Lard and butter		Free.		
	Cheese	100 lbs.	10.25	Cwt	2.7882
53	Quicksilver		Free.		
54	Seeds		Free.		
	Seeds of mustard	100 lbs.	6.25	Cwt	1.7001
55	Soap:				
	Fancy	do	33.33	do	9.0672
	Common	do	2.10	do	0.5712
56	Spirits:				
	In bottles	Pot.	0.50	Gallon	0.6700
	In casks or jars	do	0.25	do	0.3350
57	Starch:				
	From grain or potatoes		Free.		
	From rice	100 lbs.	4.20	Cwt	1.1424
58	Sugar	do	14.00	do	3.8083
	Molasses	do	4.75	do	1.2021
59	Tin:				
	For melting		Free.		
	Sheets, bars, shots, wire, &c.	100 lbs.	2.10	Cwt	0.5712
	Polished or silvered	do	33.33	do	9.0672
	Others, coarse	do	16.66	do	4.5336
60	Tobacco:				
	Leaves	do	14.66	do	3.9895
	Cigars	do	33.80	do	22.7902
	Cigarettes, in paper	do	20.80	do	5.6580
61	Vegetables		Free.		
	Salted or preserved in vinegar	100 lbs.	2.10	Cwt	0.5712
	In cans	do	14.66	do	3.9895
62	Wood:				
	In full and complete cargo	Reg. ton.	3.50	Reg. ton.	0.9380
	Firewood, or pieces under 2 feet		Free.		
	For druggists' use	100 lbs.	4.20	Cwt	1.1424
	Manufactures of—				
	Furniture, &c.	do	14.66	do	3.9895
	Fancy work	do	33.33	do	9.0672
	Coarse for building	Cu. feet.	0.12	Cu. feet.	0.0322
63	Wool		Free.		
	Manufactures of, same as Nos. 19.				
64	Zinc. Same as per Nos. 40 and 59.				

NOTE.—The Danish tariff rate of duty is still in rigsdaler, mark, and skilling, consequently a very small difference arises in the reduction of the foregoing rates to kroner and ore. One centnerweight English is equal to 101½ Danish pounds.

FRANCE.

Tariff of France on products and manufactures of the United States.

[Prepared by Consul-General Walker.]

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
1	Agricultural implements:		<i>Francs.</i>			
	Machines (not including steam-motors), mowers, reapers, plows, cultivators, &c.	100 kilos	6.00	\$0 52	100 lbs.	Net.
	Steam boilers, sheet iron, cylindrical or spherical.	do	8.00	70	do	Net.
	Steam boilers, sheet iron, other.	do	12.00	1 05	do	Net.
	Steam boilers, steel sheet—all shapes.	do	25.00	2 19	do	Net.
	Tools, handled or not; axes, forks, spades, &c.—					
	In pure iron.	do	10.00	88½	do	Gross.
	Iron and steel	do	15.00	1 31	do	Net.
	Steel	do	20.00	1 75	do	Net.
	Copper	do	20.00	1 75	do	Net.
2	Animals.					
	Horses—					
	Stallions or geldings, and mares.	Head	30.00	5 19	Head	
	Colts.	do	18.00	3 47	do	
	Mules.	do	5.00	96½	do	
	Asses.		Free			
	Cattle—					
	Oxen.	Head	25.00	4 82½	Head	
	Cows	do	12.00	2 32	do	
	Bulls.	do	12.00	2 32	do	
	Steers, bullocks, and heifers.	do	8.00	1 54	do	
	Calves	do	4.00	77	do	
	Rams, ewes, and wethers.	do	3.00	58	do	
	Lambs.	do	1.00	19	do	
	Goats and kids.	do	1.00	19	do	
	Pigs.	do	6.00	1 16	do	
	Sucking pigs.	do	1.00	19	do	
	Game—poultry, turtles.	100 kilos	20.00	1 75	100 lbs.	Net.
	Other, not specially enumerated.		Free			
3	Art works.		Free			
4	Bark and extracts for tanning and dyeing.		Free			
5	Blacking.	100 kilos	4.00	35	100 lbs.	Gross.
6	Bones and bone-black.		Free			
	Horns of cattle, raw.		Free			
	Horns, prepared or in sheets.	100 kilos	3.00	26	100 lbs.	Gross.
7	Books, maps, engravings, &c.		Free			
8	Brass, and manufactures of.	100 kilos	20.00	1 75	100 lbs.	Net.
9	Breadstuffs:					
	Barley.	do	1.50	13	do	Gross.
	Barley—flour		Free			
	Bread.	100 kilos	1.20	10	100 lbs.	Gross.
	Biscuit—					
	Sea, or mixed with extract of meat.	do	5.50	48	do	Gross.
	Ginger, anise-seed, &c.	do	15.50	1 31	do	Gross.
	Sweet.	do	35.50	3 06	do	Gross.
	Indian corn (grain and flour.)		Free			
	Oats.	100 kilos	1.50	13	100 lbs.	Gross.
	Oatmeal.		Free			
	Rye.	100 kilos	1.50	13	100 lbs.	Gross.
	Rye—flour		Free			
	Wheat.	100 kilos	3.00	26	100 lbs.	Gross.
	Wheat—flour	do	6.00	53	do	Gross.
10	Bricks—building and fire.	1,000	1.00	19	1,000	
11	Brooms:					
	Straw, birch, &c.; common, without handles.		Free			
	Straw, birch, &c., common, with handles.	100 kilos	4.00	35	100 lbs.	Net.
	Of piassava, for street-sweeping.	do	7.00	61	do	Net.
	Set in wood, vegetable, with or without handles.	do	37.50	3 28	do	Net.
	Set in wood, bristles or hair, with or without handles.	do	75.00	6 57	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty	Duty.	Unit.	
11	Brooms—Continued.		<i>Francs.</i>			
	Brushes—					
	Common, mounted in wood, with vegetable or whalebone fibers.	100 kilos ..	37. 50	\$3 28	100 lbs....	Net.
	Common, mounted in wood, with bristles or horse-hair.	...do	75. 00	6 57	...do	Net.
	Fine, mounted in bone, ivory, or metal.	...do	125. 00	10 94	...do	Net.
12	Candles:					
	Spermaceti, paraffine, or wax, all kinds..	...do	*19. 00	1 66	...do	Net.
	Stearine, having wicks twisted, woven, or plaited, and chemically prepared.	...do	*12. 00	1 05	...do	Net.
	Other, common	...do	6. 00	53	...do	Gross
13	Carriages:					
	Weighing 125 kilograms (276 pounds) or more.	...do	50. 00	4 38	...do	Net.
	Weighing less than 125 kilograms, including velocipedes.	...do	120. 00	10 51	...do	Net.
	Vehicles for commerce, agriculture, &c., on springs.	...do	12. 00	1 05	...do	Net.
	Vehicles, not on springs.....	...do	6. 00	53	...do	Gross.
14	Cars, railway:					
	First-class carriages for ordinary tracks..	...do	16. 00	1 40	...do	Net.
	Second and third class carriages for ordinary tracks.	...do	11. 00	96	...do	Net.
	Freight cars for ordinary tracks	...do	9. 00	79	...do	Gross.
	Passenger carriages for narrow tracks (47 inches wide or less).	...do	20. 00	1 75	...do	Net.
	Freight cars for narrow tracks	...do	10. 00	88	...do	Gross.
	Tramways carriages—					
	For ordinary tracks.....	...do	20. 00	1 75	...do	Net.
	For narrow tracks	...do	25. 00	2 19	...do	Net.
	Gravel cars.....	...do	5. 00	44	...do	Gross.
15	Chemicals, drugs, dyes, and medicines:					
	Bromine and bromide of potassium	...do	100. 00	8 75	...do	Net.
	Iodine, crude or refined	...do	400. 00	35 02	...do	Net.
	Iodide of potassium	...do	350. 00	30 64	...do	Net.
	Phosphorus—					
	White.....	...do	50. 00	4 38	...do	Net.
	Red	...do	149. 00	13 04	...do	Net.
	Acids—					
	Arsenic.....	...do	Free		...do	
	Benzoic	100 kilos ..	124. 00	10 86	100 lbs ..	Net.
	Boric	...do	Free.		...do	
	Hydrochloric	100 kilos ..	. 37	03	100 lbs....	Gross.
	Citric, liquid, up to 10°, inclusive.....	...do	Free		...do	
	Citric, liquid, from 10° to 35°, inclusive	100 kilos ..	6. 00	53	100 lbs....	Gross.
	Citric, liquid, over 35°.....	...do	15. 00	1 31	...do	Net.
	Citric, crystallized	...do	50. 00	4 38	...do	Net.
	Gallic, liquid.....	...do	1. 20	10	...do	Gross.
	Gallic, crystallized	...do	93 00	8 14	...do	Net.
	Nitric	...do	2 50	22	...do	Gross.
	Oleic	...do	5. 00	44	...do	Gross.
	Oxalic	...do	12. 50	1 09	...do	Net.
	Phosphoric	...do	20. 00	1 75	...do	Net.
	Stearic	...do	10. 00	88	...do	Gross.
	Sulphuric.....	...do	Free		...do	
	Tartaric	100 kilos ..	10. 00	88	100 lbs....	Gross.
	Oxides—					
	Cobalt, copper, iron, lead (except minium) tin, uranium, zinc.	...do	Free.		...do	
	Minium	100 kilos ..	2. 00	18	100 lbs....	Gross.
	Ashes, vegetable, crude or washed.....	...do	Free		...do	
	Potash and carbonate of potash.....	...do	Free		...do	
	Ashes of beet-root molasses	100 kilos ..	0. 13	01	100 lbs....	Gross.
	Soda of varec (sea wrack)	...do	0. 19	02	...do	Gross.
	Soda, caustic	...do	8. 00	70	...do	Gross.
	Soda, natural or artificial (carbonate soda)—					
	Crude, over 30° in strength	...do	2. 30	20	...do	Gross.
	Crude, under 30°	...do	7. 25	63	...do	Gross.
	Refined (salts of soda) over 60°	...do	5. 00	44	...do	Gross.
	Refined (salts of soda) under 60°	...do	17. 50	1 53	...do	Net.
	Refined, crystallized (soda crystals).	...do	2. 30	20	...do	Gross.
	Natron.....	...do	2. 30	20	...do	Gross.

* Not including the internal revenue taxes, amounting to 30 francs per 106 kilograms (\$2.63 per cwt.).

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
15	Chemicals, drugs, dyes, &c.—Continued.					
	Oxides—Continued.		<i>Francs.</i>			
	Bi carbonate of soda	100 kilos ..	5. 20	\$0 46	100 lbs	Gross.
	Salts of soda, not denominated	do	4. 35	38	do	Gross.
	Salt, marine or rock, crude or refined, other than white.	do	*2. 10	*18	do	Gross.
	Salt, refined, white	do	3. 30	29	do	
	Salts, ammoniacal—					
	Hydrochlorate (sal ammoniac) crude.	do	8. 00	70	do	Gross.
	Hydrochlorate (sal ammoniac), refined.	do	12. 00	1 05	do	Net.
	Sulphate, ammonia, crude		Free			
	Sulphate, ammonia, refined	100 kilos ..	7. 75	68	100 lbs	Gross.
	Other salts, ammonia, crude	do	3. 00	26	do	Gross.
	Other salts, ammonia, refined	do	7. 75	68	do	Gross.
	Cobalt, salts of		Free			
	Silver, salts of	100 kilos ..	930. 00	81 42	100 lbs	Net.
	Tin, salts of	do	10. 00	88	do	Gross.
	Acetate of—					
	Copper, crude	do	10. 00	88	do	Gross.
	Copper, refined, in powder	do	14 50	1 27	do	Net.
	Copper, crystals, refined	do	21. 00	1 84	do	Net.
	Iron, liquid		Free			
	Iron, concentrated	100 kilos ..	10. 50	88	100 lbs	Gross.
	Lead (sugar of lead)	do	5. 50	48	do	Gross.
	Potash	do	22. 00	1 93	do	Net.
	Soda, anhydrous	do	5. 00	44	do	Gross.
	Soda, crystallized or hydrated	do	4. 75	42	do	Gross.
	Alcohol—					
	Amylic	do	6. 25	55	do	Gross.
	Methylic	do	9. 25	81	do	Gross.
	Aluminate of soda	do	13. 50	1 18	do	Net.
	Alum of ammoniac or of potash, and sulphate of alumine.	do	1. 50	13	do	Gross.
	Ammoniac (volatile alkali)	do	3. 00	26	do	Gross.
	Arseniate of potash	100 kilos ..	8. 75	77	100 lbs	Gross.
	Arseniate of soda	do	4. 25	37	do	Gross.
	Borax—					
	crude	do	8. 75	77	do	Gross.
	refined	do	10. 00	88	do	Gross.
	Carbonate of magnesia	do	6. 25	55	do	Gross.
	Carbonate of lead	do	2. 00	18	do	Gross.
	Citrate of lime	do	7. 50	66	do	Gross.
	Chlorate of potash, soda, baryta, and others	do	32. 00	2 80	do	Net.
	Chloride of aluminum	do	200. 00	17 51	do	Net.
	Chloride, double, of aluminum and sodium	do	18. 50	1 62	do	Net.
	Chloride of lime	do	4. 00	35	do	Gross.
	Chloride of magnesium	do	. 50	04	do	Gross.
	Chloride of potash		Free			
	Chromate of potash	100 kilos ..	10. 00	88	100 lbs	Gross.
	Chromate of lead	do	16. 00	1 40	do	Net.
	Glycerine—					
	Crude	do	4. 75	42	do	Gross.
	Refined	do	7. 50	66	do	Gross.
	Kermes, liver of antimony, crocus and other oxides or salts of antimony, excepting emetic.	do	25. 00	2 19	do	Net.
	Lactate of iron	do	43. 00	3 77	do	Net.
	Magnesia, calcined	do	18. 50	1 62	do	Net.
	Nitrate of potash (saltpeter) and of soda		Free			
	Oxalate of potash	100 kilos ..	12. 50	1 09	100 lbs	Gross.
	Silicate of soda—					
	Anhydrous	do	4. 25	37	do	Net.
	Crystallized	do	3. 75	33	do	Gross.
	Hydrated	do	2. 10	18	do	Gross.
	Sulphate of copper	do	3. 00	26	do	Gross.
	Sulphate of iron	do	. 65	06	do	Gross.
	Sulphate, double, of copper and iron	do	. 50	04	do	Gross.
	Sulphate of soda—					
	Pure, anhydrous, containing 25 per cent. or less of salt.	do	2. 20	19	do	Gross.
	Pure, anhydrous, containing more than 25 per cent. of salt.	do	9. 00	79	do	Gross.
	Pure, crystallized or hydrated (Glauber's salt).	do	1. 20	10	do	Gross.

* Not including taxes of internal consumption.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or or gross.
		Unit.	Duty.	Duty.	Unit.	
15	Chemicals, drugs, dyes, &c.—Continued					
	Sulphate of soda—Continued.		<i>Francs.</i>			
	Impure, anhydrous, containing 25 per cent. or less of salt.	100 kilos ..	2. 20	\$0 19	100 lbs	Gross.
	Impure, anhydrous, containing more than 25 per cent. of salt.	do	8. 25	72	do	Gross.
	Impure, crystallized or hydrated, (Glauber's salt).	do	1. 10	10	do	Gross.
	Sulphate of zinc	do	1. 40	12	do	Gross.
	Sulphite of soda	do	2. 20	19	do	Gross.
	Hyposulphite of soda	do	4. 75	42	do	Gross.
	Sulphuret of arsenic, 5 per cent. ad valorem.					
	Sulphuret of mercury—					
	Natural (cinnabar)	100 kilos ..	Free			
	Artificial (in stones)	do	31. 00	2 71	100 lbs ...	Net.
	Pulverized (vermillion)	do	62. 00	5 43	do	Net.
	Tartrate of potash, including the double tartrate of potash and soda.		Free			
	Prussiate of potash—					
	Yellow	100 kilos ..	20. 00	1 75	100 lbs	Net.
	Red	do	30. 00	2 63	do	Net.
	Chemical products of tar and coal (coal oil, benzine, and other light oils, heavy oils, nitro-benzine, aniline, phenic acid, naphthaline, anthracene, and others not mentioned.		Free			
	All other chemical products not mentioned, including extracts of Peruvian bark, and phosphoric paste, 5 per cent. ad valorem.					
	Dyeing articles in a crude state		Free			
	Extracts of dye woods and of other dye-stuffs:					
	Alizarine (artificial madder) 5 per cent. ad valorem.					
	Annato		Free			
	Archil paste (moist)	100 kilos ..	5. 00	44	100 lbs	Gross.
	Archil, dry (cudbear)	do	10. 00	88	do	Gross.
	Catechu		Free			
	Cochineal		Free			
	Garancine and other extracts of madder.		Free			
	Indigo		Free			
	Kermes, animal		Free			
	Lack-dye		Free			
	Quercitron		Free			
	Turnsole		Free			
	Other extracts—					
	Black and violet	100 kilos ..	20. 00	1 75	100 lbs	Net.
	Red and yellow	do	30. 00	2 63	do	Net.
	Dyes, products of coal tar—					
	Dry	do	125. 00	10 94	do	Net.
	In paste, containing at least 50 per cent. of water.	do	70. 00	6 13	do	Net.
	Picric acid	do	25. 00	2 19	do	Net.
	Drugs and medicines—					
	Aloes	do	6. 00	53	do	Gross.
	Camphor, crude	do	2. 00	18	do	Gross.
	Camphor, refined	do	4. 00	35	do	Gross.
	Licorice		10. 00	88	do	Gross.
	Gums	100 kilos ..	Free			
	Manna	do	8. 00	70	100 lbs	Gross.
	Opium	do	240. 00	21 01	do	Net.
	Turpentine, essence of	do	5. 00	44	do	Gross.
	Medicinal preparations, the introduction of which into France must be authorized by the Government, shall pay specific duties, to be decided by the High School of Pharmacy, rating at 10 per cent. ad valorem, exclusive of the duties which may be fixed on medicaments composed of dutiable substances, either by the custom-house or internal revenue.					

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
15	Chemicals, drugs, dyes, &c.—Continued. Drugs and medicines—Continued. Roots, herbs, leaves, flowers, barks, and lichens, medicinal.	100 kilos ..	<i>Francs.</i> 3. 00	\$0 26	100 lbs	Gross.
	Fruits and seeds preserved in sugar	do	62. 50	5 47	do	Net.
	Fruits and seeds not preserved in sugar	do	Free .....	.....	do .....	.....
	Mineral water (jugs included)	do	Free .....	.....	do .....	.....
16	Clocks and watches:					
	Clocks:					
	For furniture, wood	100 kilos ..	15. 00	1 31	100 lbs	Net.
	For furniture, other	do	25. 00	2 19	do	Net.
	For public buildings	do	10. 00	88	do	Gross.
	Musical	do	60. 00	5 25	do	Net.
	Movements and time-pieces	do	50. 00	4 38	do	Net.
	Watches:					
	In goldcases	Each	4. 50	87	Each .....	.....
	In silver cases	do	1. 50	29	do .....	.....
	In common metal cases	do	1. 00	19	do .....	.....
	Watch cases:					
	Separate, gold	do	1. 20	23	do .....	.....
	Silver or common metal	do	. 50	10	do .....	.....
	Watch movements:					
	Gilded, nicked, or finished	do	2. 50	48	do .....	.....
	Other, finished or not finished	do	20	04	do .....	.....
	Watch materials, not specially enumerated.	100 kilos ..	50. 00	4 38	100 lbs	Net.
	Counters, pedometers, &c	Each	1. 00	19	Each .....	.....
17	Coal	100 kilos ..	. 12	01	100 lbs	Gross.
17½	Coffee:					
	Berries and nibs	do	156. 00	13 66	do	Net.
	Roasted or milled	do	208. 00	18 21	do	Net.
	Cocoa—					
	Beans	do	104. 00	9 11	do	Net.
	Crushed, in paste, tablet, or powder	do	135. 00	11 82	do	Net.
	Chocolate	do	93. 00	8 14	do	Net.
18	Copper:					
	Ore	do	Free .....	.....	do .....	.....
	Pure or alloyed with zinc or tin—					
	Rolled or hammered in bars or plates	100 kilos ..	10. 00	88	100 lbs	Gross.
	Wires of whatever size, polished or not, but neither gilt nor silvered	do	10. 00	88	do	Gross.
	Gilt or silvered, in masses or ingots, hammered, drawn, rolled, or spun with thread or silk	do	100. 00	8 75	do	Net.
	Filings and old scrap copper	do	Free .....	.....	do .....	.....
	Boilers and apparatus for distilling and heating purposes	100 kilos ..	10. 00	88	100 lbs	Net.
	Cylinders for printing, engraved or not engraved	do	15. 00	1 31	do	Net.
	Wire cloth and metallic gauze	do	20. 00	1 75	do	Net.
	Pure or alloyed with zinc or tin, manufactures of: Smith's works, works of art, ornaments and other works.	do	20. 00	1 75	do	Net.
19	Cotton and manufactures of:					
	Cotton, raw	do	Free .....	.....	do .....	.....
	Cotton wadding	100 kilos ..	10. 00	88	100 lbs	Gross.
	Cotton fabrics, pure, unbleached:					
	Weighing 11 kilograms and over to the 100 square meters, and containing in warp and filling, in spaces of 5 square millimeters—					
	30 threads or under	do	62. 00	5 43	do	Net.
	31 threads or over	do	100. 00	8 75	do	Net.
	Weighing from 7 to 11 kilograms—					
	35 threads or less	do	95. 00	8 32	do	Net.
	36 threads to 43 threads	do	125. 00	10 94	do	Net.
	44 threads and over	do	250. 00	21 89	do	Net.
	Weighing from 5 to 7 kilograms—					
	27 threads or under	do	100. 00	8 75	do	Net.
	28 to 35 threads	do	145. 00	12 69	do	Net.
	36 to 43 threads	do	235. 00	20 57	do	Net.
	44 threads or more	do	300. 00	26 26	do	Net.
	Weighing from 3 to 5 kilograms—					
	27 threads or less	do	230. 00	20 14	do	Net.
	28 to 35 threads	do	300. 00	26 26	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
19	Cotton and manufactures of—Continued.					
	Cotton fabrics, pure, unbleached—Cont'd.					
	Weighing from 3 to 5 kilograms—		<i>Francs,</i>			
	36 to 43 threads	100 kilos..	410. 00	\$35 89	100 lbs....	Net.
	44 threads or more	do	625. 00	54 72	do	Net.
	Weighing less than 3 kilograms.....	do	670. 00	58 65	do	Net.
	Weighing 11 kilograms and over to the 100 square meters, and containing in warp and filling, in spaces of 5 square millimeters:					
	30 threads or less.....	do	71. 30	6 24	do	Net.
	31 threads or more	do	115. 00	10 07	do	Net.
	Weighing from 7 to 11 kilograms—					
	35 threads or less.....	do	109. 25	9 57	do	Net.
	36 to 43 threads.....	do	143. 75	12 58	do	Net.
	44 threads and more.....	do	287. 50	25 17	do	Net.
	Weighing from 5 to 7 kilograms—					
	27 threads or less.....	do	115. 00	10 07	do	Net.
	28 to 35 threads.....	do	166. 75	14 60	do	Net.
	36 to 43 threads.....	do	270. 25	23 66	do	Net.
	44 threads or more.....	do	345. 00	30 20	do	Net.
	Weighing from 3 to 5 kilograms—					
	27 threads or less.....	do	264. 50	23 15	do	Net.
	28 to 35 threads.....	do	345. 00	30 20	do	Net.
	36 to 43 threads	do	471. 50	41 28	do	Net.
	44 threads or more	do	718. 75	62 92	do	Net.
	Weighing less than 3 kilograms	do	770. 50	67 45	do	Net.
	(In counting the threads in the warp and woof the fractions of threads are not counted.)					
	Cotton fabrics, pure, dyed—					
	In Turkey red, duties on unbleached augmented 60 francs per 100 kilograms (\$5.25 per 100 lbs.).					
	In other dyes, duties on unbleached augmented 30 francs per 100 kilograms (\$2.63 per 100 lbs.).					
	Cotton fabrics, pure, printed on other ground than Turkey red (100 meters long by not more than 1 meter wide) are liable to the duties on unbleached fabrics, according to sort, augmented as follows—					
	For linings	100 meters.	2. 50	39	100 meters.	
	For other prints of one and two colors	do	3. 75	72	do	
	For other prints of three to six colors	do	6. 25	1 21	do	
	For all other prints of seven or more colors.	do	10. 00	1 93	do	
	(Where the width of the goods exceeds one meter the duty shall be proportionately increased.)					
	Cotton fabrics printed on ground of Turkey red are liable to the duties on unbleached fabrics, according to the sort augmented, 1st, of 60 francs per 100 kilograms (\$5.25 per 100 lbs.); 2d, of the additional duty applied to other goods.					
	Cotton velvets (imitation of silk)—					
	Unbleached	100 kilos..	143. 00	12 52	100 lbs....	Net.
	Dyed or printed	do	174. 00	15 23	do	Net.
	Cotton velvets, other (cords, mole skins, &c.)—					
	Unbleached	do	100. 00	8 75	do	Net.
	Dyed or printed	do	131. 00	11 47	do	Net.
	Cotton fabrics manufactured in whole or in part of dyed yarn, duty on unbleached augmented 60 francs per 100 kilograms (\$5.25 per 100 lbs.).					
	Brilliant, cotton, unbleached, same duty as plain unbleached fabrics, according to sort, augmented 10 per cent.					

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
19	Cotton and manufactures of—Continued.					
	Brilliant, cotton, bleached or dyed, same duty as bleached or dyed fabrics, according to sort, augmented 10 per cent.					
	Covers, quilts, reps, cotton, unbleached—		<i>Francs.</i>			
	Weighing more than 18 kilograms to the 100 square meters.	100 kilos ..	125. 00	\$10 94	100 lbs	Net.
	Weighing 18 kilograms or less	do	180. 00	15 76	do	Net.
	Bleached—					
	Weighing more than 18 kilograms ..	do	143. 75	12 58	do	Net.
	Weighing 18 kilograms or less	do	207. 00	18 12	do	Net.
	Dyed in Turkey red—					
	Weighing more than 18 kilograms ..	do	185. 00	16 20	do	Net.
	Weighing 18 kilograms or less	do	240. 00	21 01	do	Net.
	Dyed in other dyes—					
	Weighing more than 18 kilograms ..	do	155. 00	13 57	do	Net.
	Weighing 18 kilograms or less	do	210. 00	18 38	do	Net.
	Dimit, damask, and table cloth—					
	Unbleached	do	114. 00	9 98	do	Net.
	Bleached	do	131. 10	11 48	do	Net.
	Dyed in Turkey red	do	174. 00	15 23	do	Net.
	Dyed, other	do	144. 00	12 61	do	Net.
	Guipure lace for furniture—					
	Unbleached	do	185. 00	16 20	do	Net.
	Bleached	do	212. 75	18 62	do	Net.
	Dyed in Turkey red	do	245. 00	21 45	do	Net.
	Dyed, other	do	215. 00	18 82	do	Net.
	Blankets, quilts	do	68. 00	5 95	do	Net.
	Hosiery (cotton or chintz thread)—					
	Gloves	do	1,000. 00	875 44	do	Net.
	Other, cut and seamless	do	125. 00	10 94	do	Net.
	Other, finished	do	300. 00	26 26	do	Net.
	Trimmings of pure cotton	do	236. 00	20 66	do	Net.
	Ribbons, of pure cotton	do	124. 00	10 86	do	Net.
	Tulle—					
	Large bobbins, rated less than 7 meshes to the square centimeter.	do	406. 00	43 25	do	Net.
	Small bobbins net, 7 meshes or more to the square centimeter.	do	700. 00	61 28	do	Net.
	Embroidery made by hand, and gauze, fancy figured.	do	680. 00	54 28	do	Net.
	Laces and cloud laces, whether made by hand or machinery.	do	495. 00	43 33	do	Net.
	Curtains, embroidered muslins, not framed—					
	Weighing less than 10 kilograms to the 100 meters square.	do	300. 00	26 26	do	Net.
	Weighing 10 kilograms or more, and curtains of embroidered muslin, framed, whatever be the weight to the 100 meters square, separate or in pieces.	do	600. 00	52 53	do	Net.
	Curtains, tulle, applique, grenadine, and embroidered tulle.	do	700. 00	78 79	do	Net.
	Muslin, figured or embroidered with crochet, for upholstering or for garments—					
	Unbleached	do	300. 00	31 52	do	Net.
	Bleached	do	414. 00	36 24	do	Net.
	Embroideries made by hand or machinery.	do	800. 00	70 04	do	Net.
	Wicks, cotton	do	74. 00	6 48	do	Net.
	Oil cloth—					
	For packing	do	8. 00	70	do	Net.
	For upholstery, hangings, and other uses.	do	30. 00	2 63	do	Net.
	Mole-skins, imitation of leather ..	do	30. 00	2 63	do	Net.
	Heddles, twisted yarn, for weavers' looms.	do	50. 00	4 38	do	Net.
	Cotton articles composed of cotton mixed with other materials, cotton predominating in weight—					
	Stuffs, cotton mixed with silk	do	372. 00	32 57	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
19	Cotton and manufactures of—Continued.					
	Cotton articles composed of cotton mixed with other materials, cotton predominating in weight—Continued.					
	Stuffs, cotton mixed with other materials.	100 kilos.	Francs. 124. 00	\$10 86	100 lbs....	Net.
	Ribbons, cotton and wool.....	do	150. 00	13 13	do	Net.
	Ribbons, cotton and silk.....	do	370. 00	32 57	do	Net.
	Trimmings, cotton and silk.....	do	370. 00	32 57	do	Net.
	Other (same as tissues of pure cotton).					
	Cotton yarn, single, unbleached, measuring to the $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	18. 50	1 62	do	Net.
	20,500 to 30,500 meters.....	do	25. 00	2 19	do	Net.
	30,500 to 40,500 meters.....	do	37. 00	3 24	do	Net.
	40,500 to 50,500 meters.....	do	50. 00	4 38	do	Net.
	50,500 to 60,500 meters.....	do	62. 00	5 43	do	Net.
	60,500 to 70,500 meters.....	do	74. 00	6 48	do	Net.
	70,500 to 80,500 meters.....	do	87. 00	7 62	do	Net.
	80,500 to 90,500 meters.....	do	112. 00	9 81	do	Net.
	90,500 to 100,500 meters.....	do	124. 00	10 86	do	Net.
	100,500 to 110,500 meters.....	do	149. 00	13 04	do	Net.
	110,500 to 120,500 meters.....	do	174. 00	15 23	do	Net.
	120,500 to 130,500 meters.....	do	198. 00	17 33	do	Net.
	130,500 to 140,500 meters.....	do	248. 00	21 71	do	Net.
	140,500 to 170,500 meters.....	do	310. 00	27 14	do	Net.
	170,500 and over.....	do	372. 00	32 57	do	Net.
	Cotton yarn, single bleached, measuring to the $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	21. 27	1 86	do	Net.
	20,500 to 30,500 meters.....	do	28. 75	2 52	do	Net.
	30,500 to 40,500 meters.....	do	42. 55	3 73	do	Net.
	40,500 to 50,500 meters.....	do	57. 50	5 03	do	Net.
	50,500 to 60,500 meters.....	do	71. 30	6 24	do	Net.
	60,500 to 70,500 meters.....	do	85. 10	7 45	do	Net.
	70,500 to 80,500 meters.....	do	100. 05	8 76	do	Net.
	80,500 to 90,500 meters.....	do	128. 30	11 27	do	Net.
	90,500 to 100,500 meters.....	do	142. 60	12 48	do	Net.
	100,500 to 110,500 meters.....	do	171. 35	15 00	do	Net.
	110,500 to 120,500 meters.....	do	200. 10	17 52	do	Net.
	120,500 to 130,500 meters.....	do	227. 70	19 93	do	Net.
	130,500 to 140,500 meters.....	do	235. 20	24 97	do	Net.
	140,500 to 170,500 meters.....	do	356. 50	31 21	do	Net.
	170,500 meters and over.....	do	427. 30	37 45	do	Net.
	Cotton yarn, single, dyed, or cleaned in ordinary dyes, measuring to the $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	48. 50	4 25	do	Net.
	20,500 to 30,500 meters.....	do	55. 00	4 81	do	Net.
	30,500 to 40,500 meters.....	do	67. 00	5 86	do	Net.
	40,500 to 50,500 meters.....	do	80. 00	7 00	do	Net.
	50,500 to 60,500 meters.....	do	92. 00	8 05	do	Net.
	60,500 to 70,500 meters.....	do	134. 17	9 11	do	Net.
	70,500 to 80,500 meters.....	do	117. 00	10 24	do	Net.
	80,500 to 90,500 meters.....	do	142. 00	12 43	do	Net.
	90,500 to 100,500 meters.....	do	154. 00	13 48	do	Net.
	100,500 to 110,500 meters.....	do	179. 00	15 67	do	Net.
	110,500 to 120,500 meters.....	do	204. 00	17 86	do	Net.
	120,500 to 130,500 meters.....	do	228. 00	19 96	do	Net.
	130,500 to 140,500 meters.....	do	278. 00	24 33	do	Net.
	140,500 to 170,500 meters.....	do	340. 00	29 77	do	Net.
	170,500 meters and over.....	do	402. 00	35 19	do	Net.
	Cotton yarn, single, dyed or cleaned in Turkey red, measuring to the $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	78. 50	6 87	do	Net.
	20,500 to 30,500 meters.....	do	85. 00	7 44	do	Net.
	30,500 to 40,500 meters.....	do	97. 00	8 49	do	Net.
	40,500 to 50,500 meters.....	do	110. 00	9 63	do	Net.
	50,500 to 60,500 meters.....	do	122. 00	10 68	do	Net.
	60,500 to 70,500 meters.....	do	134. 00	11 73	do	Net.
	70,500 to 80,500 meters.....	do	147. 00	12 87	do	Net.
	80,500 to 90,500 meters.....	do	172. 00	15 06	do	Net.
	90,500 to 100,500 meters.....	do	184. 00	16 11	do	Net.
	100,500 to 110,500 meters.....	do	209. 00	18 30	do	Net.
	110,500 to 120,500 meters.....	do	234. 00	20 49	do	Net.
	120,500 to 130,500 meters.....	do	258. 00	22 59	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
19	Cotton and manufactures of—Continued.					
	Cotton yarn, single, dyed or cleaned in Turkey red, measuring to the $\frac{1}{2}$ kilogram—Continued,		<i>Francs.</i>			
	130,500 to 140,500 meters.....	100 kilos..	308.00	\$26 96	100 lbs....	Net.
	140,500 to 170,500 meters.....	do	370.00	32 39	do	Net.
	170,500 meters and over.....	do	432.00	37 82	do	Net.
	Cotton yarn, unbleached, twisted, of 2 or 3 threads, in small, ordinary skeins, measuring to the $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	24.05	2 10	do	Net.
	20,500 to 30,500 meters.....	do	32.50	2 84	do	Net.
	30,500 to 40,500 meters.....	do	48.10	4 21	do	Net.
	40,500 to 50,500 meters.....	do	65.00	5 69	do	Net.
	50,500 to 60,500 meters.....	do	80.60	7 06	do	Net.
	60,500 to 70,500 meters.....	do	96.20	8 42	do	Net.
	70,500 to 80,500 meters.....	do	113.10	9 90	do	Net.
	80,500 to 90,500 meters.....	do	145.60	12 75	do	Net.
	90,500 to 100,500 meters.....	do	161.20	14 11	do	Net.
	100,500 to 110,500 meters.....	do	193.70	16 96	do	Net.
	110,500 to 120,500 meters.....	do	226.20	19 80	do	Net.
	120,500 to 130,500 meters.....	do	257.40	22 53	do	Net.
	130,500 to 140,500 meters.....	do	322.40	28 22	do	Net.
	140,500 to 170,500 meters.....	do	403.00	35 28	do	Net.
	170,500 meters and over.....	do	483.60	42 34	do	Net.
	Cotton yarn, bleached, twisted in 2 or 3 threads, in small ordinary skeins, measuring, to the $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	27.65	2 42	do	Net.
	20,500 to 30,500 meters.....	do	37.38	3 27	do	Net.
	30,500 to 40,500 meters.....	do	55.32	4 84	do	Net.
	40,500 to 50,500 meters.....	do	74.75	6 54	do	Net.
	50,500 to 60,500 meters.....	do	92.69	8 11	do	Net.
	60,500 to 70,500 meters.....	do	110.63	9 68	do	Net.
	70,500 to 80,500 meters.....	do	130.06	11 39	do	Net.
	80,500 to 90,500 meters.....	do	167.44	14 68	do	Net.
	90,500 to 100,500 meters.....	do	185.38	16 23	do	Net.
	100,500 to 110,500 meters.....	do	222.75	19 50	do	Net.
	110,500 to 120,500 meters.....	do	260.13	22 77	do	Net.
	120,500 to 130,500 meters.....	do	296.01	25 94	do	Net.
	130,500 to 140,500 meters.....	do	370.76	32 46	do	Net.
	140,500 to 170,500 meters.....	do	463.45	40 57	do	Net.
	170,500 meters and over.....	do	556.14	48 69	do	Net.
	Cotton yarn, twisted in 2 or 3 threads, dyed or clouded, in ordinary colors, measuring, by $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	54.05	4 73	do	Net.
	20,500 to 30,500 meters.....	do	68.50	5 47	do	Net.
	30,500 to 40,500 meters.....	do	78.10	6 84	do	Net.
	40,500 to 50,500 meters.....	do	95.00	8 32	do	Net.
	50,500 to 60,500 meters.....	do	110.60	9 68	do	Net.
	60,500 to 70,500 meters.....	do	126.20	11 05	do	Net.
	70,500 to 80,500 meters.....	do	143.10	12 53	do	Net.
	80,500 to 90,500 meters.....	do	175.60	15 37	do	Net.
	90,500 to 100,500 meters.....	do	191.20	16 74	do	Net.
	100,500 to 110,500 meters.....	do	223.70	19 58	do	Net.
	110,500 to 120,500 meters.....	do	256.20	22 43	do	Net.
	120,500 to 130,500 meters.....	do	287.40	25 16	do	Net.
	130,500 to 140,500 meters.....	do	352.40	30 85	do	Net.
	140,500 to 170,500 meters.....	do	433.00	37 91	do	Net.
	170,500 meters and over.....	do	513.60	44 96	do	Net.
	Cotton yarn, twisted in 2 or 3 threads, dyed in Turkey red, measuring, by $\frac{1}{2}$ kilogram—					
	20,500 meters or less.....	do	84.05	7 36	do	Net.
	20,500 to 30,500 meters.....	do	92.50	8 10	do	Net.
	30,500 to 40,500 meters.....	do	108.10	9 47	do	Net.
	40,500 to 50,500 meters.....	do	125.00	10 94	do	Net.
	50,500 to 60,500 meters.....	do	140.60	12 31	do	Net.
	60,500 to 70,500 meters.....	do	156.20	13 67	do	Net.
	70,500 to 80,500 meters.....	do	173.10	15 15	do	Net.
	80,500 to 90,500 meters.....	do	205.60	18 00	do	Net.
	90,500 to 100,500 meters.....	do	221.20	19 37	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
19	Cotton and manufactures of—Continued.					
	Cotton yarn, twisted in 2 or 3 threads, dyed in Turkey red, measuring, by $\frac{1}{2}$ kilogram—		<i>Francs.</i>			
	100,500 to 110,500 meters	100 kilos ..	253 70	\$22 21	100 lbs....	Net.
	110,500 to 120,500 meters	do	286. 20	25 05	do	Net.
	120,500 to 130,500 meters	do	317. 40	27 79	do	Net.
	130,500 to 140,500 meters	do	382. 40	33 48	do	Net.
	140,500 to 170,500 meters	do	463. 00	40 53	do	Net.
	170,500 meters and over	do	543. 60	47 59	do	Net.
	Cotton yarn:					
	Twisted, in 4 or more threads, in small, ordinary skeins, unbleached, bleached, or dyed—					
	Single twisted	1,000 meters of single thread.	0. 015	0. 003	1,000 meters of single thread.	
	Double twisted and cable	do	0. 020	0. 004	do	
	Cotton yarn, twisted, made up in balls, spools, small skeins, cards, or other forms, regardless of the number of strand, unbleached, bleached, or dyed—					
	Single twisted	do	0. 020	0. 004	do	
	Double twisted and cable	do	0. 025	0. 005	do	
	Cotton warps:					
	Unbleached (duty on the component yarn augmented by 30 per cent.).	100 kilos ..			100 lbs....	
	Bleached (same duty as unbleached cotton warp, augmented by 15 per cent.).	do			do	
	Dyed in ordinary dyes (30 francs per 100 kilos—\$2.63 per 100 pounds—over and above the duty on cotton warp, unbleached).	do			do	
	Dyed in Turkey red (60 francs per 100 kilos—\$5.25 per 100 pounds—over and above the duty on cotton warp, unbleached).	do			do	
	Cotton yarn, mixed, the cotton predominating in weight (same duty as that of pure cotton yarn).	do			do	
20	Earthen, stone, and china ware:					
	Earthenware, potteries of common clay, gas retorts, crucibles of all sorts, including those in graphite or plumbago, drain pipes, clay pipes, &c., glazed or not.		Free			
	Other, glazed, with decorations of sculpture or paintings.	100 kilos ..	5. 00	44	100 lbs....	Gross.
	Utensils used in the manufacture of chemical products.		Free			
	Stoneware:					
	Common	100 kilos ..	4 00	35	100 lbs....	Gross.
	Fine	do	8. 00	70	do	Gross.
	Tiles:					
	Ceramics, of different colors	do	3. 00	26	do	Gross.
	Ceramics, of one color	do	1. 00	09	do	Gross.
	Faience:					
	Stanniferous, of colored paste, covered white, or colored, with ornaments in relief, flutings, or indentations, monochrome, molded, not finished by hand.		Free			
	Parti-colored glaze, stamped or hand-painted, or molded and hand-finished.	100 kilos ..	15. 00	1 31	100 lbs....	Net.
	Fine (fine white paste baked and cleansed), white or covered with uniform colored glaze.	do	10. 00	88	do	Net.
	Fine, decorated	do	15. 00	1 31	do	Net.
	Porcelain:					
	White, china	do	12. 50	1 09	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
20	Earthen, stone, and china ware—Continued. Porcelain—Continued. Decorated china, parian, and bisque ware.	100 kilos ..	<i>Francs.</i> 25. 00	\$2 19	100 lbs....	Net.
21	Fertilizers, guano and other		Free			
22	Fish:					
	Fresh	100 kilos ..	5. 00	44	100 lbs....	Gross.
	Codfish (including stockfish and kelp-fish), dried, salted, or smoked.	do	48. 00	4 20	do	Net.
	Other, dried, salted, or smoked	do	10. 00	88	do	Gross.
	Preserved in oil, pickled, or otherwise prepared.	do	10. 00	88	do	Gross.
	Oysters—					
	Fresh, young, for propagation		Free			
	Fresh, other	1, 000	1 50	29	1, 000	Gross.
	Pickled	100 kilos ..	10. 00	88	100 lbs....	Gross.
	Lobsters—					
	Fresh	do	5. 00	44	do	Gross.
	Preserved or prepared	do	10. 00	88	do	Gross.
	Shell-fish		Free			
	Parings, cod, and mackerel	100 kilos ..	60	05	100 lbs....	Gross.
	Fish bladders, raw or singly dried		Free			
	Fish oil	100 kilos ..	6. 00	53	100 lbs....	Gross.
	Whale oil and spermaceti:					
	Crude	do	5 00	44	do	Gross.
	Pressed	do	10 00	88	do	Gross.
	Refined	do	15. 00	1 31	do	Net.
	Seal-skins, raw		Free			
	Whalebone, uncut		Free			
	Coral, rough, uncut		Free			
	Sponges:					
	Raw	100 kilos ..	35. 00	3 06	100 lbs....	Net.
	Prepared, fine	do	65. 00	5 69	do	Net.
23	Flax, hemp, and jute, manufactures of:					
	Fabrics of pure flax or hemp plain or worked, showing in warp and woof, in a space of 5 square millimeters, after divisions of the whole by 2—					
	Unbleached—					
	6 threads or less	do	28. 00	2 45	do	Net.
	7 to 8 threads, inclusive	do	42. 00	3 68	do	Net.
	9 to 10 threads, inclusive	do	68. 00	5 95	do	Net.
	11 to 12 threads, inclusive	do	81. 00	7 09	do	Net.
	13 to 14 threads, inclusive	do	112. 00	9 80	do	Net.
	15, 16, and 17 threads	do	143. 00	12 52	do	Net.
	18, 19, and 20 threads	do	236 00	20 14	do	Net.
	21, 22, and 23 threads	do	344. 00	30 12	do	Net.
	Over 23 threads	do	460. 00	40 27	do	Net.
	When bleached, dyed, or printed—					
	6 threads or less	do	36. 40	3 19	do	Net.
	7 to 8 threads, inclusive	do	54. 60	4 78	do	Net.
	9 to 10 threads, inclusive	do	88. 40	7 74	do	Net.
	11 to 12 threads, inclusive	do	105. 30	9 31	do	Net.
	13 to 14 threads, inclusive	do	145 60	12 75	do	Net.
	15, 16, and 17 threads	do	185. 96	16 27	do	Net.
	18, 19, and 20 threads	do	299 00	26 18	do	Net.
	21, 22, and 23 threads	do	447. 20	39 15	do	Net.
	Over 23 threads	do	598. 00	52 35	do	Net.
	(In counting the threads, both of the warp and woof, fractions of thread are not counted; the sum of the two numbers is divided by 2, and if the quotient be fractional, the fraction shall be counted as an entire thread.)					
	Canvas, floor cloth, oil-cloth foundations, linoleum, and other similar fabrics.	do	30. 00	2 63	do	Net.
	Linen damask, for bedding and upholstery—					
	Unbleached	do	112. 00	9 81	do	Net.
	Cream-colored, bleached, or mixed with white and colored threads.	do	145. 60	12 75	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
23	Flax, hemp, and jute, manufactures of—Continued.					
	Table linen, damasked, unbleached, having warp, in a space of 5 square millimeters—		<i>Francs.</i>			
	12 threads or less.....	100 kilos ..	93. 00	\$8 14	100 lbs....	Net.
	13 and 14 threads.....	do	129. 00	11 29	do	Net.
	15, 16, and 17 threads.....	do	165. 00	14 45	do	Net.
	18, 19, and 20 threads.....	do	265. 00	23 20	do	Net.
	21, 22, and 23 threads.....	do	395. 00	34 58	do	Net.
	Over 23 threads.....	do	530. 00	46 40	do	Net.
	The same, bleached, clouded, or mixed with unbleached threads, and bleached or colored threads, same duty as on unbleached table linens, augmented 30 per cent.					
	Twills—					
	Unbleached.....	do	120. 00	10 51	do	Net.
	Cream-colored, white, or mixed with unbleached threads, and bleached or colored threads.	do	156. 00	13 66	do	Net.
	Trimmings and ribbons, unbleached, brown, or gloss bleached.	do	149. 00	13 04	do	Net.
	The same, cream-colored, bleached or dyed.	do	174. 00	15 23	do	Net.
	Hosiery, flax or hemp.....	do	124. 00	10 86	do	Net.
	Laces and linen gimps.....	do	495. 00	43 33	do	Net.
	Embroidered handkerchiefs and other embroideries on linen.	do	496. 00	43 42	do	Net.
	Mixed fabrics, flax and hemp predominating in weight, same duty as on linen or hemp fabrics, according to kind.					
	Flax or hemp yarns and threads—					
	Single, unbleached, measuring to the kilogram—					
	2,000 meters or less.....	do	16. 00	1 40	do	Net.
	2,000 to 5,000 meters.....	do	18. 00	1 57	do	Net.
	5,000 to 10,000 meters.....	do	23. 00	2 01	do	Net.
	10,000 to 20,000 meters.....	do	33. 00	2 89	do	Net.
	20,000 to 30,000 meters.....	do	40. 00	3 50	do	Net.
	30,000 to 40,000 meters.....	do	50. 00	4 38	do	Net.
	40,000 to 60,000 meters.....	do	70. 00	6 13	do	Net.
	60,000 to 80,000 meters.....	do	99. 00	8 67	do	Net.
	80,000 to 100,000 meters.....	do	149. 00	13 04	do	Net.
	More than 100,000 meters.....	do	250. 00	17 51	do	Net.
	Single, bleached or colored, or twisted, but unbleached, measuring by the kilogram—					
	2,000 meters or less.....	do	20. 80	1 82	do	Net.
	2,000 to 5,000 meters.....	do	23. 40	2 02	do	Net.
	5,000 to 10,000 meters.....	do	29. 90	2 64	do	Net.
	10,000 to 20,000 meters.....	do	42. 90	3 76	do	Net.
	20,000 to 30,000 meters.....	do	52. 00	4 55	do	Net.
	30,000 to 40,000 meters.....	do	65. 00	5 69	do	Net.
	40,000 to 60,000 meters.....	do	91. 00	7 97	do	Net.
	60,000 to 80,000 meters.....	do	128. 70	11 27	do	Net.
	80,000 to 100,000 meters.....	do	193. 70	16 96	do	Net.
	More than 100,000 meters.....	do	260. 00	22 76	do	Net.
	Yarn, twisted, bleached or dyed, measuring by the kilogram—					
	2,000 meters or less.....	do	27. 04	2 37	do	Net.
	2,000 to 5,000 meters.....	do	30. 42	2 66	do	Net.
	5,000 to 10,000 meters.....	do	38. 87	3 40	do	Net.
	10,000 to 20,000 meters.....	do	55. 77	4 88	do	Net.
	20,000 to 30,000 meters.....	do	67. 60	5 91	do	Net.
	30,000 to 40,000 meters.....	do	84. 50	7 40	do	Net.
	40,000 to 60,000 meters.....	do	118. 50	10 36	do	Net.
	60,000 to 80,000 meters.....	do	168. 31	14 65	do	Net.
	80,000 to 100,000 meters.....	do	251. 81	22 05	do	Net.
	More than 100,000 meters.....	do	338. 00	29 60	do	Net.
	Thread, polished, twine and strings, measuring per kilogram of single thread—					
	500 meters or less.....	do	18. 50	1 59	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
23	Flax, hemp, and jute, manufactures of—Continued.					
	Flax or hemp yarns and threads—Cont'd.					
	Thread, polished, twine and strings, measuring per kilogram of single thread—Continued.					
	500 to 2,000 meters, inclusive.....	100 kilos ..	Francs. 22. 50	\$1 97	100 lbs	Net.
	More than 2,000 meters, same duty as flax or hemp yarns, twisted, according to kind.					
	Fishing nets.....	do	20. 00	1 75	do	Net.
	Pure jute fabrics—					
	Pure jute fabrics showing in warp and woof, in a space of 5 square millimeters after division of the total by 2—					
	Unbleached—					
	3 threads or less	do	16. 00	1 40	do	Net.
	4 and 5 threads	do	28. 00	2 45	do	Net.
	6, 7, and 8 threads	do	30. 00	2 63	do	Net.
	More than 8 threads, same duties as linen fabrics.					
	Bleached or dyed—					
	3 threads or less	do	18. 50	1 59	do	Net.
	4 and 5 threads	do	38. 00	3 33	do	Net.
	6, 7, and 8 threads	do	43. 00	3 76	do	Net.
	More than 8 threads, same duties as linen fabrics.					
	Carpets	do	25. 00	2 19	do	Net.
	Mixed fabrics, principally jute, same duties as pure jute fabrics.					
	Yarns of pure jute, unbleached, measuring by the kilogram—					
	Less than 1,400 meters	do	6. 25	55	do	Net.
	From 1,400 to 3,700 meters	do	7. 50	66	do	Net.
	From 3,700 to 4,200 meters	do	8. 75	77	do	Net.
	From 4,200 to 6,000 meters	do	12. 50	1 09	do	Net.
	More than 6,000 meters, same duty as flax or hemp yarn, unbleached.					
	Yarn of pure jute, bleached or dyed, measuring by kilogram—					
	Less than 1,400 meters	do	8. 75	77	do	Net.
	From 1,400 to 3,700 meters	do	11. 00	96	do	Net.
	From 3,700 to 4,200 meters	do	12. 50	1 07	do	Net.
	From 4,200 to 6,000 meters	do	17. 50	1 53	do	Net.
	More than 6,000 meters, same duty as flax or hemp yarn, bleached or dyed.					
	Yarn of mixed jute, the jute predominating in weight, same duty as yarns of jute.					
	Yarn of phormium tenax, abaca, and other fibrous vegetables not mentioned, either pure or mixed, the phormium or abaca, &c., predominating in weight, same duty as yarn of jute.					
24	Fruits—					
	Fresh fruits—					
	Lemons, oranges, and their varieties	do	4. 50	37	do	Gross.
	Carob beans	do	. 30	03	do	Gross.
	Others		Free			
	Dried fruits—					
	Figs, raisins, apples, and pears, almonds, and nuts.	100 kilos..	6. 00	53	100 lbs	Gross.
	Others	do	8. 00	70	do	Gross.
	Fruits—					
	Preserved in brandy	do	*40. 00	3 50	do	Net.
	Preserved in honey or sugar	do	62. 50	5 47	do	Net.
	Preserved or pickled, not otherwise specified.	do	8. 00	70	do	Gross.
	Distillers' fruit, anis green		Free			
	Oleaginous fruits and seeds		Free			

*Not including internal taxes.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
25	Furs and fur skins:		<i>Francs.</i>			
	Undressed		Free			
	Dressed whole, or in strips sewn together—					
	Astrakans		Free			
	Goat-skins		Free			
	Hamster and white rabbit skins, not dyed.		Free			
	Hares, white, and bags of the same.		Free			
	Seals and bluebacks, including dyed skins.		Free			
	Sea-wolf and otter skins		Free			
	Squirrels, and bags of the same		Free			
	Other, not above denominated	100 kilos..	100. 00	8 75	100 lbs....	Net.
	Made up and worked	do	500. 00	43 77	do	Net.
26	Glass and glassware:					
	Glass plates and mirrors—					
	Less than half a square meter in surface.	100 kilos ..	25. 00	2 19	100 lbs....	Net.
	From half a square meter to a square meter, exclusive, rough, unpolished.	Sq. meter..	1. 20	23	Sq. meter..	Net.
	From half a square meter to a square meter, exclusive, polished or silvered.	do	3. 75	72	do	Net.
	A meter, square or more, unpolished..	do	1. 90	37	do	Net.
	A meter square or more, polished or silvered.	do	5. 00	96	do	Net.
	Goblets of glass or crystal—					
	Plain, molded, and pressed, white or tinted, throughout one color.	100 kilos ..	4. 25	37	100 lbs....	Gross.
	Cut, or engraved, in any other manner than is necessary for effacing the mark of the portée.	do	12. 50	1 09	do	Net.
	Decorated in gold or colors	do	31. 00	2 71	do	Net.
	Window-glass—					
	Common	do	4. 25	37	do	Gross.
	Stained, engraved, or polished	do	18. 50	1 62	do	Net.
	Watch crystals, spectacle and optic, including glasses for toy watches, unpolished.	do	15. 00	1 31	do	Net.
	Same, cut and polished	do	149. 00	13 04	do	Net.
	Vitrifications and enamel in lumps or tubs.	do	4. 75	42	do	Gross.
	Vitrifications in beads, pierced and cut, or in crystals, for jewelry, trinkets, colored or not, spun glass, balls, and coral imitations.	do	25. 00	2 19	do	Net.
	Bottles	do	3. 00	26	do	Net.
	Broken glass		Free			
	Other glass manufactures not denominated.	100 kilos..	18. 50	1 62	100 lbs....	Gross.
27	Glucose, or grape-sugar	do	62. 50	5 47	do	Net.
28	Glue:					
	Gelatine		Free			
	Fish or isinglass	100 kilos..	40. 00	3 50	100 lbs....	Net.
	Bird lime		Free			
29	Gunpowder and other explosives:					
	Gunpowder (prohibited).					
	Dynamite, imported under special authorization of the French Government.	100 kilos..	250. 00	21 89	100 lbs....	
	Percussion caps—					
	For military uses (prohibited).					
	For sporting uses	do	60. 00	5 25	do	Net.
	Cartridges—					
	For military uses (prohibited).					
	For shooting societies	do	25. 00	2 19	do	Net.
	For sporting uses, filled (prohibited)					
	For sporting uses, empty (cases for cartridges, primed or not primed).	do	60. 00	5 25	do	Net.
	Projectiles (prohibited).					
	Slow-matches for mines—					
	Ordinary	do	35. 00	3 06	do	Net.
	Covered with linen ribbon	do	50. 00	4 38	do	Net.
	Covered with gutta-percha	do	80. 00	7 00	do	Net.
	Fireworks	do	100. 00	8 75	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
30	Hair:		<i>Francs.</i>			
	Hair of animals, bristles, &c., raw or simply prepared.		Free			
	Hair of animals, combed	100 kilos..	10. 00	\$0 88	100 lbs....	Gross.
	Feathers—					
	Ornamental, dressed or undressed, quills, prepared or not.		Free			
	Bed, all kinds, including down	100 kilos..	20. 00	1 75	100 lbs....	Net.
	Hair, human, and manufactures of		Free			
31	Hay		Free			
32	Hides and skins, raw, green, or dried		Free			
33	Honey	100 kilos..	10. 00	88	100 lbs....	Gross.
34	Hops	do	15. 00	1 31	do	Net.
35	Ice		Free			
36	India-rubber, and gutta-percha, and manufactures of:					
	India-rubber and gutta-percha, crude		Free			
	Manufactures of india-rubber and gutta-percha—					
	Pure or mixed with other substances	100 kilos..	20. 00	1 75	100 lbs....	Net.
	Applied upon textile fabrics or upon any other materials.	do	100. 00	8 75	do	Net.
	Webbings	do	200. 00	17 51	do	Net.
	Boots and shoes	do	60. 00	5 25	do	Net.
	Made up garments	do	120. 00	10 51	do	Net.
36½	Instruments and apparatus for scientific purposes.		Free			
37	Iron and steel, and manufactures of:					
	Iron ore		Free			
	Cast iron, pig-iron, and fragments (for ballast, purified iron called "masee").	100 kilos..	2. 00	18	100 lbs....	Gross.
	Iron—					
	In lumps, not freed from dross (only the lumps of iron containing at least 6 per cent. of dross will be considered under this classification).	do	4. 50	39	do	Gross.
	Rolled, bars, angles, and rails of all sorts, and T-iron (pig-iron containing 6 per cent. or more of dross will be classed as iron, not freed from dross).	do	6. 00	53	do	Gross.
	Plate or hoop, more than a millimeter thick.	do	6. 00	53	do	Gross.
	Sheets and plates, millimeter thick and less.	do	7. 50	66	do	Gross.
	For wire manufacture (machine iron).	do	6. 00	53	do	Gross.
	Sheet, smooth or hammered, more than a millimeter thick, not cut.	do	7. 50	66	do	Gross.
	Sheet, smooth or hammered, more than a millimeter thick and cut.	do	8 00	70	do	Gross.
	Sheet, thin and black rolled iron-plate, 1 millimeter thick or less, not cut to any shape.	do	10. 00	88	do	Gross.
	Sheet, thin and black rolled iron-plate, 1 millimeter thick or less, cut to any shape.	do	11. 00	96	do	Net.
	Tinned, coppered, covered with zinc or lead.	do	13. 00	1 14	do	Net.
	Wire, whether tinned, coppered, covered with zinc or lead, or not so tinned, &c., $\frac{1}{16}$ of a millimeter thick or less.	do	10. 00	88	do	Gross.
	Wire, other	do	6. 00	53	do	Gross.
	Manufactures of cast-iron and iron combined—					
	Not polished, the weight of the iron being less than half of the whole.	do	5. 00	44	do	Gross.
	Not polished, the weight of the iron not being less than half of the whole.	do	8. 00	70	do	Gross.
	Polished, enameled, or varnished, with ornaments in iron, copper, brass, or steel.	do	12. 00	1 05	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
37	Iron and steel, and manufactures of—Cont'd.		<i>Francs.</i>			
	Cast-iron work, not tinned or polished, seats for railway plates and other castings from the open mold.	100 kilos ..	3. 00	\$0 25	100 lbs	Gross.
	Cast-iron columns, solid or hollow, straight cylindrical pipes, rafters, gas retorts, solid bars, and sets thereof, grates and chimney-backs, shafts of machinery, frames of machines, and other objects without ornaments or fittings.	do	3. 75	33	do	Gross.
	Cast-iron work, other, not turned or polished, cast-iron pots, and all other like manufactures not included in the two preceding classes.	do	4. 50	39	do	Gross.
	Cast iron, turned or polished.....	do	6. 00	53	do	Gross.
	Cast iron, tinned, enameled, or varnished.....	do	10. 00	88	do	Gross.
	Anchors, chains, and chain-cables, and drags in the French ports and roadsteads, under the rulings provided in the law of July 2, 1836.	do	1. 25	11	do	Gross.
	Anchors, chains, and cables, others.....	do	8. 00	70	do	Gross.
	Arms of war (prohibited).					
	Arms of commerce:					
	Side-arms	do	40. 00	3 50	do	Net.
	Fire-arms, loading at the mouth.....	do	240. 00	21 01	do	Net.
	Fire-arms, breech-loading	do	360. 00	31 52	do	Net.
	Gun-barrels, crude.....	do	60. 00	5 25	do	Net.
	Car-wheels, iron bolts and nuts.....	do	8. 00	70	do	Gross.
	Cutlery:					
	Common cutlery, kitchen and butcher knives, and common tailors' scissors.	do	125. 00	10 94	do	Net.
	Common razors.....	do	250. 00	21 89	do	Net.
	Others	do	375. 00	32 83	do	Net.
	Fine cutlery.....	do	600. 00	52 53	do	Net.
	Fish-hooks	do	50. 00	4 38	do	Net.
	Gasometers, open boilers, furnaces, and stoves, iron, or cast and sheet-iron.	do	8. 00	70	do	Net.
	Household ware, and other articles not mentioned, in iron—					
	Polished or painted.....	do	14. 00	1 22	do	Net.
	The same tinned, enameled, or varnished.	do	16. 00	1 40	do	Net.
	Household wares in steel, and other steel goods not mentioned.	do	20. 00	1 75	do	Net.
	Locks and padlocks of all sorts, pins, small hinges in sheet iron, latches, flat bolts and other like articles in wrought or cast-iron, turned, polished, or filed, for furniture irons or for doors and windows.	do	12. 00	1 05	do	Net.
	Machinery and mechanical apparatus—					
	Steam, fixed, with or without boilers or fly-wheels.	do	6. 00	53	do	Net.
	Marine engines, with or without boilers.	do	12. 00	1 05	do	Net.
	Locomotive and portable engines	do	10. 00	88	do	Net.
	Others, not steam-engines; tenders for locomotives.	do	8. 00	70	do	Net.
	Machinery for setting sheets and fillet cards.	do	6. 00	53	do	Net.
	Carding-machines, not furnished	do	10. 00	88	do	Net.
	Machines for cleaning and opening flax, wool, cotton, and other textile materials.	do	6. 00	53	do	Net.
	Spinning-machines	do	10. 00	88	do	Net.
	Weaving-machines	do	6. 00	53	do	Net.
	Bobbinet-machines	do	10. 00	88	do	Net.
	Paper-making machines	do	6. 00	53	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
37	Iron and steel, and manufactures of—Cont'd. Machinery and mechanical apparatus—Continued.		<i>Francs.</i>			
	Printing-machines.....	100 kilos ..	6.00	\$0 53	100 lbs	Net.
	Agricultural machines, not including motors, steam-boilers, of iron plate, cylindrical, or spherical, with or without heating tubes.	do	8.00	70	do	Net.
	Steam-boilers, tubular, sheet-iron, with tubes of iron, copper, or brass, with internal furnaces, and all other boilers, not cylindrical or simply spherical.	do	12.00	1 05	do	Net.
	Steam-boilers of steel sheet, all shapes	do	25.00	2 19	do	Net.
	Sewing-machines	do	6.00	53	do	Net.
	Machine parts and detached pieces—					
	In cast-iron, filed and fitted	do	6.00	53	do	Net.
	Others, in wrought-iron polished, filed, and adjusted, or not, without distinction of weight, and including axles, springs, and wheel-bandages.	do	10.00	88	do	Net.
	Other pieces, in wrought steel, springs for carriages, wagons, and locomotives.	do	10.00	88	do	Net.
	Other pieces, in wrought steel, and other pieces polished, filed, adjusted, or not, weighing more than 1 kilogram (including axles and wheel bandages for wagons and locomotives).	do	10.00	88	do	Net.
	Other pieces, in wrought steel, polished, filed, adjusted, or not, weighing 1 kilogram, or less.	do	20.00	1 75	do	Net.
	Dents of reeds in iron or copper; reeds, irons, and weaving-combs in iron or copper.	do	30.00	2 63	do	Net.
	Sheets and fillets of cards, on leather, india-rubber, and woven fabrics, pure or mixed.	do	50.00	4 38	do	Net.
	Sheets and fillets prepared for cards, of leather, india-rubber, and specially woven fabrics.	do	20.00	1 75	do	Net.
	Machine tools, and machines not mentioned, containing—					
	75 per cent. of cast-iron, or more.....	do	6.00	53	do	Net.
	50 to 75 per cent. cast-iron.....	do	10.00	88	do	Net.
	Less than 50 per cent. cast-iron.....	do	15.00	1 31	do	Net.
	Nails—					
	Forged by machinery	do	8.00	70	do	Net.
	Forged by hand	do	12.00	1 05	do	Net.
	Needles—					
	Knitting, and other like articles in steel, iron, or copper.	do	25.00	2 19	do	Net.
	Sewing, under 5 centimeters long....	do	248.00	21 71	do	Net.
	Sewing, over 5 centimeters long	do	124.00	10 86	do	Net.
	Pins.....	do	50.00	4 38	do	Net.
	Pens, metallic, not gold or silver.....	do	100.00	8 75	do	Net.
	Plates or stamps engraved for impressions on paper.		Free			
	Plates of steel or iron	100 kilos ..	10.00	88	100 lbs	Gross.
	Steel—					
	In bars, rails, axles, and bands of wheels, forge steel.	do	6.00	53	do	Gross.
	In bars, other of all kinds	do	9.00	79	do	Gross.
	In sheets or coils, brown, rolled hot, more than a millimeter thick, not cut.	do	9.00	79	do	Net.
	In sheets, as above, cut to any shape.	do	9.90	87	do	Net.
	In sheets, as above, demi-millimeter thick, or less, not cut.	do	15.00	1 31	do	Net.
	In sheets, as above, demi-millimeter thick, or less, cut to any shape.	do	16.50	1 44	do	Net.
	In sheets or coils, white, rolled cold, of any thickness, not cut.	do	15.00	1 31	do	Net.
	In sheets, &c., as above, cut to any shape.	do	16.50	1 44	do	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
37	Iron and steel, and manufactures of—Cont'd.					
	Steel wire, white, for strings of instruments.	100 kilos ..	Francs. 20.00	\$1 75	100 lbs	Net.
	Iron filings and scales		Free	2 19		
	Steel cables	100 kilos ..	25.00	1 75	100 lbs	Net.
	Steel beads, buckles, brooches, thimbles, and like small wares.	do	20.00	2 19	do	Gross.
	Tools—					
	With or without handles, made wholly of iron.	do	10.00	88	do	Net.
	Of steeled iron	do	15.00	1 31	do	Net.
	Of steel	do	20.00	75	do	Net.
	Tubes and fittings, iron—					
	Butt welded, 9 millimeters or more inside diameter.	do	11.00	96	do	Net.
	The same, of less than 9 millimeters inside diameter.	do	20.00	1 75	do	Net.
	Iron, lap-welded	do	20.00	1 75	do	Net.
	Joinings, of all sorts	do	20.00	1 75	do	Net.
	Iron or steel work—					
	In meshes of under 2 centimeters wide	do	10.00	88	do	Gross.
	Other	do	8.00	70	do	Gross.
	Wrought iron—					
	Heavy iron wares	do	8.00	70	do	Gross.
	Bent frames, ship's joists, irons for carts or wagons, hinges, handles, large bolts, square knees, and other irons for doors and windows, not polished nor turned, wire-work couches, seats, and garden or other furniture, with or without accessory ornaments in cast-iron, copper, or steel.	do	8.00	70	do	Gross.
38	Jewelry, manufactures of gold and silver and other precious metals:					
	Articles, manufactures or ware of gold, silver, aluminium, platinum, and other precious metals.	do	500.00	43 77	do	Net.
	Articles gilded or silvered by plating, mercury or electro-chemical processes—					
	False jewelry	do	500.00	43 77	do	Net.
39	Other articles	do	100.00	8 75	do	Net.
	Lamps, chandeliers, and all devices and appliances for illuminating purposes (not specially classified, pay the duty imposed on the material or component part paying the highest rate except when such component part can be easily separated from or merely constitutes an accessory to the whole).					
40	Lead and manufactures of—					
	Ore and slag of all kinds in crude lumps, pigs, bars, or sheets.		Free			
	Alloyed with antimony, in lumps	100 kilos ..	3.00	26	100 lbs	Gross.
	Hammered or rolled	do	3.00	26	do	Gross.
	Filings and fragments of old manufactures.	do	Free		do	
41	Pipe, and other manufactures of lead.	do	3 00	26	do	Gross.
	Leather and manufactures of:					
	Skins—					
	Prepared, varnished, or morocco	do	74.00	6 48	do	Net.
	Sheep, dyed	do	56.00	4 90	do	Net.
	Others, dyed	do	74.00	6 48	do	Net.
	Others, goat, sheep, or lamb	do	10.00	88	do	Gross.
	Others not mentioned	do	50.00	4 38	do	Net.
	Morocco leather—					
	Soft	do	200.00	17 51	do	Net.
	Hard	do	150.00	13 13	do	Net.
	Other	do	100.00	8 75	do	Net.
	Boots	Pair	2.00	39	Pair	
	Gaiters for men or women	do	1.25	24	do	
	Shoes	do	.75	14	do	
	Thongs for sabots	100 kilos ..	62.00	5 43	100 lbs	Net.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United states money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
41	Leather and manufactures of—Continued.					
	Gloves—		<i>Francs.</i>			
	Lamb or calf, merely sewed.....	Dozen	1.00	\$0 19	Dozen	
	Lamb or calf, piqués	do	1.50	29	do	
	Kid, merely sewed.....	do	2.00	39	do	
	Kid, piqués	do	2.50	48	do	
	Saddles—					
	For men	Each	10.00	1 93	Each	
	For women	do	12.00	2 32	do	
	Fine saddlery articles (not saddles).....	100 kilos..	200.00	17 51	100 kilos..	Net.
	Harness goods	do	50.00	4 38	do	Net.
	Leather straps	do	62.00	5 43	100 lbs....	Net.
	Leather pipes or cylinders.....	do	62.00	5 43	do	Net.
	Leather trunks, wood or card-board covered with leather.	do	74.00	6 48	do	Net.
42	Lime, cement, and plaster		Free			
43	Malt liquors, beer	Hectoliter.	7.75	06	Gallon	
44	Musical instruments:					
	Upright pianos	Piece	50.00	9 65	Piece	
	Grand pianos	do	75.00	14 48	do	
	Harmoniums, with or without pedals, weighing—					
	Less than 60 kilograms	do	10.00	1 93	do	
	From 60 to 120 kilograms.....	do	20.00	3 86	do	
	From 120 kilograms upward.....	do	30.00	5 79	do	
	Church organs, weighing—					
	Less than 4,000 kilograms (packing included).	do	100.00	19 30	do	
	4,000 to 10,000 kilograms.....	do	200.00	38 60	do	
	10,001 to 20,000 kilograms.....	do	400.00	77 20	do	
	20,001 kilograms upwards.....	do	500.00	96 50	do	
	Hand-organs, with or without figures, playing several airs.	do	15.00	2 90	do	
	Small hand-organs.....	do	2.00	39	do	
	Vielles.....	do	3.00	58	do	
	Harps	do	50.00	9 65	do	
	Violins, altos, guitars, mandolins, viols d'amour, zithers, and æolian harps.	do	2.00	39	do	
	Violoncellos	do	4.00	77	do	
	Counter bass-viols.....	do	8.00	1 54	do	
	Small flutes, flageolettes, and musettes—					
	With one key and ocarinas.....	Dozen	1.20	23	Dozen	
	With several keys.....	Piece	1.00	19	Piece	
	Flutes—					
	With one key.....	do	.20	04	do	
	With several keys.....	do	1.00	19	do	
	Hautboys, clarionets, English horns, bagpipes.	do	2.00	39	do	
	Ophecleides, bombardons, and helicons..	do	4.00	77	do	
	Bassoons, saxophones, sarussophones, and brass instruments with 6 pistons.	do	12.50	2 41	do	
	Clarions and trumpets.....	do	.80	15	do	
	Horns and cornets, in brass or horn.....	do	.30	06	do	
	Hunting horns	do	1.60	31	do	
	Cornets with 3 pistons, cornets with keys and pistons, néocors, harmony trumpets, sax horns, trombones, buccins, and bugles.	do	3.50	68	do	
	Chinese cymbals, large and small drums, chimes, &c.	do	2.50	48	do	
	Tambourines, triangles, and castanets ..	Pair	.50	10	Pair	
	Cymbals.....	do	1.50	29	do	
	Tantams and Chinese gongs.....	Piece.....	3.00	58	Piece	
	Accordeons and concertinas.....	do	1.00	19	do	
	Harmonicas (mouth) in wood or metal, jewsharps.	100 kilos..	60.00	5 25	100 kilos..	
	Music boxes	do	50.00	4 38	do	
	Accessories and parts of musical instruments—					
	Metronomes	Piece	1.00	19	Piece	
	Apparatus for mechanical playing of pianos and harmoniums.	do	40.00	7 72	do	
	Pedalers.....	do	40.00	7 72	do	
	Bows, finished or not, plain	do	.30	06	do	
	Bows, finished or not, richly incrusted	do	.60	12	do	

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
44	Musical instruments—Continued. Accessories and parts of musical instruments—Continued. Anches, mouthpieces, and breaks for wind instruments. Instrument cases of all sorts (duties on materials). Detached portions of musical instruments not mentioned (duties on component materials).					
		Dozen	Franks. .50	\$0 10	Dozen	
45	Naval stores: European resins, and other resinous products.	100 kilos ..	2. 00	18	100 lbs	Gross.
	Coal-tar, bitumen, &c.....	do	Free			
46	Oil cake		Free			
47	Oils: Animal oils— Animal fat, except fish oil..... Waste of fish oil and alkalies from the process of manufacturing chamois leather.		Free			
	Fish oil.....	100 kilos ..	6. 00	53	100 lbs	Gross.
	Vegetable oils— Oil, olive, fixed pure.....	do	4. 50	39	do	Gross.
	Oil, palm, cocoanut, toulouconna and illipé.	do	1. 00	09	do	Gross.
	Oil, other	do	6. 00	53	do	Gross.
	Oils, fixed, aromatic.....	do	80. 00	7 00	do	Net.
	Oils, volatile, or essence of rose or rosewood.	do	4, 000. 00	350 02	do	Net.
	Oils, of orange, lemon, and their varieties.	do	150. 00	13 13	do	Net.
	Oils, all other	do	100. 00	8 75	do	Net.
	Mineral oils— Petroleum and other mineral oils for illuminating purposes— Crude	do	18. 00	1 57	do	Net.
	Refined.....	do	25. 00	2 19	do	Net.
48	Paraffine: Crude, stearic acid	do	10. 00	88	do	Gross.
	Wax, crude.....	do	2. 00	18	do	Gross.
	Wax, manufactured, other than candles.	do	19. 00	1 66	do	Gross.
	Sealing-wax	do	30. 00	2 63	do	Net.
49	Paints and painters' colors: Ultramarine	do	20. 00	1 75	do	Net.
	Prussian blue.....	do	12. 00	1 05	do	Net.
	Carmines— Common	do	25. 00	2 19	do	Net.
	Fine	do	200. 00	17 51	do	Net.
	Varnishes— Alcohol.....	do	30. 00	2 63	do	Net.
	Essence.....	do	20. 00	1 75	do	Net.
	Oil, or essence and oil mixed.....	do	40. 00	3 50	do	Net.
	Ink— Writing, printing, or drawing.....	do	20. 00	1 75	do	Net.
	Ivory black.....	do	5. 00	44	do	Gross.
	Black, for printing in mild cut	do	8. 00	70	do	Gross.
	Black, Spanish or lamp.....	do	1. 20	10	do	Gross.
	Black, mineral (ore)		Free			
	Pencils— Crayon, simple slate.....	100 kilos ..	1. 00	07	100 lbs	Gross.
	Carpenters', common, in soft wood	do	35. 00	3 06	do	Net.
	Fine, in cedar or hard woods	do	140. 00	12 26	do	Net.
	For pocket books, with or without bone heads.	do	240. 00	21 01	do	Net.
	Colors, ground, or otherwise prepared for painting.	do	.25	02	do	Gross.
	Earths, Cologne, Cassel, Italian, sienna, and umber.	do	.50	04	do	Gross.
	Green, Schweinfurt and mixed green; blue and green ashes.	do	5. 00	44	do	Gross.
	Green, mountain, Brunswick, and others, formed by mixing chromate of lead and Prussian blue.	do	5. 00	44	do	Gross.
	Talc, pulverized	do	.25	02	do	Gross.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
49	Paints and painters' colors—Continued.		<i>Francs.</i>			
	Ground oil-colors, including carbonate of lead in oil.	100 kilos..	4. 00	\$0 35	100 lbs....	Gross.
	Water-colors, in paste for paper-hangings.	do	7. 50	66	do	Gross.
	Colors, not specified, 5 per cent. ad valorem, with power to transfer to an equivalent specific duty.					
50	Paper and manufactures of:					
	NOTE.—All these are duties exclusive of the internal-revenue taxes on paper established by the laws of September 4, 1871, and June 21, 1873.					
	Paper, fancy, colored, marbled, honey-combed, covered or not covered with metal.	100 kilos.	25. 00	2 19	do	Net.
	Paper, other, of all sorts	do	11. 00	96	do	Net.
	Paste, or card-board, in sheets	do	11. 00	96	do	Net.
	Papier-maché	do	11. 00	96	do	Net.
	Card-board cut and joined into boxes, covered with white or colored paper.	do	36. 00	3 15	do	Net.
	Card-board, cut and joined; albums or card boxes, decorated with painting, stuffs, woods, straw-plaiting, or metals. (This relates to ornaments in common metals; albums and card-boxes ornamented in precious metals will clear separately under the heading of jewelry.)	do	70. 00	7 13	do	Net.
	Books		Free			
	Engravings, stamps, prints, lithographs, photographs, and drawings of all sorts on paper.		Free			
	Geographical and marine maps		Free			
	Sheet music, engraved or printed		Free			
	NOTE.—All infractions of copyrights remain prohibited.					
	Cards, labels, printed, engraved, and colored.	100 kilos ..	11. 00	96	100 lbs....	Net.
	Playing cards (cards for children's play are classed under toys) (prohibited).					
	Pipes and conduits in bituminous paper.	do	1. 25	41	do	Gross.
51	Plated ware, articles gilded or silvered by plating, mercury, or electrochemical processes.	do	500. 00	43 77	do	Net.
52	Provisions:					
	Meat—					
	Fresh, butchers'	do	7. 00	61	do	Gross.
	Game, poultry, and turtle	do	20. 00	1 75	do	Net.
	Salted		8. 50	74	do	Gross.
	Preserved in cans		8. 00	70	do	Gross.
	Extracts of		4. 00	35	do	Gross.
	Oleomargarine		Free			
	Lard		Free			
	Butter, fresh and melted	100 kilos ..	13. 00	1 14	100 lbs....	Net.
	Butter, salted	do	15. 00	1 31	do	Net.
	Cheese, soft	do	6. 00	53	do	Gross.
	Cheese, hard	do	8. 00	70	do	Gross.
53	Quicksilver		Free			
54	Seeds		Free			
55	Soap:					
	Common	100 kilos ..	6. 00	53	100 lbs....	Gross.
	Perfumed	do	12. 00	1 05	do	Net.
56	Spirits, distilled, and spirituous compounds:					
	Brandy, in bottles	Hectoliter of liquid.	30. 00	22	Gallon of liquid.	
	Brandy, not in bottles	Hectoliter of pure alcohol.	30. 00	22	Gallon of pure alcohol.	
	Other spirits	do	30. 00	22	do	

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
57	Spirits, distilled, and spirituous compounds— Continued. Liqueurs	Hectoliter of liquid.	<i>Francs.</i> 40.00	\$0 29	Gallon of liquid.	
	NOTE.—Products of which alcohol is a component part, besides the customs duties, are subject to the internal-revenue tax upon the alcohol used, according to the regulations determined upon by the Committee of Arts and Manufactures.					
57	Starch	100 kilos..	6.00	53	100 lbs....	Gross.
58	Sugar and molasses:					
	Sugar, brown, estimated to produce when refined—					
	98 per cent. or less	(*)	50.00	4 38	100 lbs. of refined sugar.	Net.
	More than 98 per cent.	(†)	62.50	5 47	(‡)	Net.
	Sugar, refined—					
	Other than candied	(†)	62.50	5 47	(‡)	Net.
	Candied	(†)	67.00	5 86	(‡)	Net.
	Molasses:					
	For distilling purposes		Free			
	Other than for distilling purposes, having an absolute saccharine richness of—					
	50 per cent. or less	100 kilos ..	15.00	1 31	100 lbs	Net.
	More than 50 per cent	do	32.00	2 80	do	Net.
	Sirups and candies	do	62.50	5 47	do	Net.
59	Tin:					
	Ore		Free			
	In crude lumps, block tin, bars, or sheets		Free			
	Alloyed with antimony (Britannia metal) in ingots.	100 kilos ..	5.00	44	100 lbs	Gross.
	Pure or alloyed, hammered or rolled	do	6.00	53	do	Gross.
	Filings and fragments of old manufactures.		Free			
	Pure or alloyed with antimony; vessels, pots, and other wares.	100 kilos ..	30.00	2 63	100 lbs	Net.
60	Tobacco:					
	In leaf or otherwise, for the Régie (monopoly).		Free			
	On private account (prohibited).					
	Manufactured for the Régie		Free			
	Manufactured tobacco for the personal use of the importer up to the amount of 10 kilos per year and per consignee subject to prohibition against offering for sale and under reserve of the administration granting permission—					
	Cigars and cigarettes	100 kilos ..	3,600.00	315 15	100 lbs	Net.
	Snuff and chewing tobacco	do	1,500.00	131 32	do	Net.
	Smoking tobacco from the Levant	do	2,500.00	218 86	do	Net.
	Smoking tobacco of all other source	do	1,500.00	131 32	do	Net.
	Other manufactured tobacco (prohibited).					
	Tobacco juice (Prais) (prohibited).					
61	Vegetables:					
	Green		Free			
	Salted or preserved	100 kilos ..	3.00	26	100 lbs	Gross.
62	Wood, and manufactures of:					
	Woods, common, building wood, oak, elm, walnut, with or without bark, sawed or otherwise, and other woods of all dimensions, masts, materials, spars, handles and oars, horns, hop poles, cork (rough, rasped, and planks) and other common wood, fire-wood, charcoal, and kindling.		Free			
	Split splints	1,000	.10	02	1,000	
	Staff and tremails	1,000	.25	05	1,000	

* 100 kilos net weight of refined sugar.

† 100 kilos, net, of the actual weight.

‡ 100 pounds of the actual weight.

Tariff of France on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.		Net or gross.
		Unit.	Duty.	Duty.	Unit.	
62	Wood, and manufactures of—Continued.					
	For cabinet work—		<i>Francs.</i>			
	Logs or sawed, more than two decimeters thick, and mahogany, box-wood, and others.					
	Sawed two decimeters thick, or under.	100 kilos ..	1. 00	\$0 09	100 lbs	Gross.
	Perfumed woods, dye-woods in logs or ground.		Free ..			
	Empty casks on stands or not—					
	With wooden hoops	100 kilos ..	2. 00	18	100 lbs	Gross.
	With iron hoops	do	2. 50	22	do	Gross.
	Common brooms		Free ..			
	Pieces of frame-work, wheelwright's work, rough, cut out or sawed and shaped.		Free ..			
	Button molds	100 kilos ..	13. 00	1 14	100 lbs	Net.
	Common sabots (wooden shoes)	do	12. 00	1 05	do	Net.
	The same, painted, varnished, or lined with skins.	do	25. 00	2 19	do	Net.
	Boxes, in white wood	do	2. 00	18	do	Gross.
	Planks, freizes, and strips of parquet, planed and grooved—					
	In oak or hard wood	do	2. 00	18	do	Gross.
	In pine or soft wood	do	1. 00	09	do	Gross.
	Wooden bushels, and other like articles in hard or soft wood, coarse or fine.	do	4. 00	35	do	Gross.
	Other articles in hard or soft wood	do	7. 00	* 61	do	Gross.
	Furniture :					
	In bent wood, mounted or not	do	7. 00	61	do	Gross.
	Other than in bent wood—					
	Seats without carving, inlaid work or ornaments of brass or copper, in common wood.	do	7. 00	61	do	Gross.
	The same in cabinet wood	do	10. 00	88	do	Gross.
	Seats, carved, inlaid or ornamented with brass or copper, in all kinds of wood.	do	15. 00	1 31	do	Net.
	Other than seats—					
	Veneered, but without carving; inlaid work, or brass or copper ornaments.	do	10. 00	88	do	Gross.
	Veneered, carved, inlaid, ornamented with brass or copper.	do	25. 00	2 19	do	Net.
	Heavy, common wood	do	5. 00	44	do	Gross.
	Heavy, in hard woods, with or without moldings, but not carved, inlaid or ornamented with brass or copper.	do	10. 00	88	do	Gross.
	Heavy, in fine wood, carved, inlaid, or ornamented with brass or copper.	do	18. 00	1 57	do	Net.
	Stuffed and covered, all sorts, 15 per cent. above the foregoing duties according to the class of goods.					
	Frames and moldings in wood, and gilt woods.	do	15. 00	1 31	do	Net.
63	Wool :					
	Including alpaca, llama, vicuna, yack, camel's hair, Australian and Cape of Good Hope, in bulk.		Free ..			
	Imported direct from country where produced.		Free ..			
	Waste wools		Free ..			
	Carded or combed	100 kilos ..	25. 00	2 19	100 lbs	Net.
	Dyed	do	25. 00	2 19	do	Net.
64	Zinc :					
	Ore, crude, or burnt, pulverized, or not ..		Free ..			
	In crude lumps, blocks, bars, or sheets ..		Free ..			
	Rolled	100 kilos ..	4. 00	35	100 lbs	Gross.
	Filings and fragments of old manufactures.		Free ..			
	Manufactures of zinc, all kinds	100 kilos ..	8. 00	70	100 lbs	Gross.

The full French tariff was printed in No. 15 of the Consular Reports, p. 128. The modifications were given in No. 41, p. 439.

GERMANY.

Customs duties collected under German tariff laws.

[Prepared by Consul-General F. Raine.]

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
1	Agricultural implements:		<i>Marks.</i>	
	Manufactures of iron, coarse, not otherwise provided for, also in connection with wood.	100 kilos	6. 00	\$1 42
	Manufactures of iron, coarse, not otherwise provided for, polished, varnished.	do	10. 00	2 38
	Manufactures of wood, crude, not colored, only planed or carved, also iron mounted.	do	3. 00	71 ¹ / ₂
	Manufactures of wood made by joiners, turners, cartwrights, colored, varnished, stained, lacquered, polished.	do	10. 00	2 38
2	Animals:			
	Cattle, young up to two and a half years old	Head	6. 00	1 42
	Hogs	do	6. 00	1 42
	Horses	do	20. 00	4 76
	Mules	do	10. 00	2 38
	Sheep	do	1. 00	23
	Cows	do	9. 00	2 14
	Steers	do	9. 00	2 14
	Oxen	do	30. 00	7 14
	Sucking pigs, under 10 kilograms	do	1. 00	23
	Calves, under six weeks old	do	3. 00	71
3	Art works:			
	Paintings and drawings		Free.	.....
	Statuary of marble and other stones, of metal at least in natural size; medals, cast in gypsum or sulphur (as statuary shall be considered only such productions as possess a real artistic value and as are not produced by mechanical way).		Free.	.....
4	Bark, and extracts:			
	Bark	100 kilos	0. 50	11
	Tanning extracts		Free.	.....
5	Blacking	100 kilos	3. 00	71
6	Bones (not for carving); bones, hoofs, horns, &c. (for carving).		Free.	.....
7	Books, in all languages, geographical and sea maps, paper written on (records and manuscripts), maps for scientific purposes, music, engravings.		Free.	.....
8	Brass		Free.	.....
	Brass cartridges and other brass articles	100 kilos	30. 00	7 14
9	Breadstuffs:			
	Wheat, rye	do	3. 00	71
	Oats, barley	do	1. 50	35
	Indian corn, buckwheat	do	1. 00	23
	Rice	do	4. 00	95
	Grains, not otherwise provided for	do	1. 00	23
	Ordinary bakers' ware	do	2. 00	47
	Biscuit	do	60. 00	14 28
	Mill products of grain and pulse		7. 50	1 78
10	.....			
11	Brushes and brooms:			
	Brooms of brushwood			
	Brushes and brooms—			
	Coarse, of bast, straw, reed, grass, roots, &c.; also in connection with wood or iron, without polish and varnish.	100 kilos	4. 00	95
	Others, also combined with wood or iron, without polish and varnish.	do	3. 00	1 90
	Coarse, of bristles or other animal substitutes, hair.	do	3. 00	1 90
12	Candles	do	18. 00	4 28
13	Carriages:			
	Only planed or carved		3. 00	71
	Colored, stained, varnished, lacquered, polished, and the like.	100 kilos	10. 00	2 38

Customs duties collected under German tariff laws—Continued.

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
13	Carriages—Continued. Cars, without leather not upholstered— At a value of not less than 1,000 marks (\$238) apiece, 6 per cent. ad valorem. At a value of 1,000 marks (\$238) and more, 6 per cent. ad valorem. Other railroad, horse (street) cars, 10 per cent. ad valorem. Other carriages with leather and upholstered...	100 kilos	150. 00	\$35 70
15	Chemicals: Ethers of all kinds, chloroform, collodium, etheric oils, except those hereafter enumerated, essences, extracts, tinctures, and waters containing alcohol or ether, for the trade or medicinal use; all varnishes, except oil varnishes, painters' (gouache) pastel colors, Chinese ink, paint boxes, pencil and crayons drawing chalk. Ultramarine	do	20. 00	4 76
	Oil of juniper and rosemary	do	15. 00	3 57
	Matches and tapers	do	12. 00	2 85½
	Oxalic acid and oxalite of potassium; yellow, white, and red prussiate of potassium.	do	10 00	2 38
	Oil varnish	do	8. 00	1 90
	Caustic potash; caustic hydrate of soda	do	6. 00	1 42
	Alum, barytes white, printers' ink, chloride of lime, dye-wood extracts, gelatine, putty, glue, soot, shoe-blackening, sealing-wax, inks and ink powders, combustibles, except matches and tapers.	do	4. 00	95
	Soda, calcined; bicarbonate of soda	do	3. 00	71
	Soda, raw, natural or artificial; crystallized soda, potash.	do		
	Water (soluble) glass	do	2. 50	59
	Raw chemical preparations for industrial or medicinal uses, drugs, chemicals, and dye-stuffs not heretofore included.	do	1. 50	35
	Preparations of strontia	do	1. 00	23
16	Clocks and watches: Watches, movements, and cases for such— Watches in gold cases	100 kilos	Free.	.....
	Watches in silver cases; also gilded or with gilded or plated rims, rings, and buttons; movements without casings.	Each	2. 00	47
	Watches in cases of other materials	do	3. 00	71
	Gold cases without movements (works)	do	1. 50	35
	Other cases without works	do	. 50	11
	Clocks, staple	do	. 50	11
	Movements for other than staple clocks and watches, and parts of base metals.	100 kilos	10. 00	2 38
17	Coal	do	60. 00	14 28
18	Copper: Ore	do	Free.	.....
	Copper, crude or scrap; copper and other small coins.	do	Free.	.....
	Wrought or rolled copper, in bars and sheets, and telegraph cable.	100 kilos	12. 00	2 86
	In sheets or wire, plated	do	28. 00	6 66
	Manufactures, viz— Coarse coppersmiths' and brass-founders' work; also combined with wood or iron, not polished or lacquered; also tubes of sheet-brass and wire-cloth.	do	18. 00	4 28
	Other, provided they do not come under aluminium, nickel, fancy articles, &c., or by reason of their composition with other materials under No. 20 of the German tariff, fancy goods.	do	30. 00	7 14
	Aluminium, nickel, fancy articles, &c	do	60. 00	14 28
19	Cotton	do	Free.	.....
	Manufactures of cotton alone or cotton with metal threads, unmixed with silk, wool, or other animal hair: Raw (of raw yarn), close tissue, except cut velvets; net-lace, raw and not figured.	100 kilos	80. 00	19 04
	Bleached, close tissue, also finished, excepting cut velvets.	do	100. 00	23 80

Customs duties collected under German tariff laws—Continued.

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
19	Cotton—Continued.		<i>Marks.</i>	
	Manufactures of cotton alone or cotton with metal threads, unmixed with silk, wool, or other animals hair—			
	All close tissues not included in Nos. 1, 2, 3, 6; raw (of raw yarn) light fabrics, excepting window curtains, not coming under No. 1; hosiery, laces, trimmings, and buttons; also goods spun in part with metal threads.	100 kilos	120.00	\$28 50
	Curtain stuffs, bleached and finished	do	230.00	54 70
	All light fabrics, as jaconet, muslin, tulle, marly, gauze, not provided for.	do	200.00	47 60
	Laces and embroideries	do	350.00	83 30
	Cotton fishing nets, new	do	3.00	71
	Very coarse textures of raw spun cotton waste, also mixed with other materials, or single dyed threads, in pieces not over 50 centimeters square, having the appearance of gray packing linen, and used for press cloths, scrubbing cloths, &c.	do	10.00	2 38
	Emery cloth	do	6.00	1 42
20	Earthen, stone, and china ware:			
	Common bricks, tiles, tubes, and pottery not fire-proof, not glazed.		Free.	
	Fire-proof stones	do	.50	11
	Glazed tiles and bricks, clay slabs, architectural ornaments, also of terra cotta, glazed tubes, jars, and other vessels of common stoneware, coarse stove-tile, glazed pottery.	do	1.00	23
	Smelting pots, muffles, capsules, and retorts, plates.	do	2.00	47
	Other clay ware exclusive of porcelains and wares similar to porcelain—			
	Plain, colored, or white, fancy terra cotta ware.	do	10.00	2 38
	Two and more colored, bordered, printed, painted, gilded, silvered, &c.	do	16.00	3 80
	Porcelain and wares similar to porcelain (Pari-an, jasper, &c.)—			
	White	do	14.00	3 33
	Colored, bordered, painted, &c.	do	30.00	7 14
21	Fertilizers		Free.	
22	Fish:			
	Fresh		Free.	
	Salted (except herrings), imported in barrels, dried, smoked, roasted, merely boiled.	do	3.00	71 ¹ / ₂
	Pickled, in barrels	do	12.00	2 85
	Prepared, others, fish of all kinds imported in vessels hermetically closed.	do	60.00	14 28
	Herrings, salted	Cask	3.00	71 ¹ / ₂
23	Flax, hemp, and jute.		Free.	
	Ropemakers' articles—			
	Ropes, cables, and cords, also bleached or tarred.	100 kilos	10.00	2 38
	Others	do	24.00	5 71
	Linen, ticking, drilling, undyed, unprinted, and unbleached—			
	Up to 40 threads in the warp and woof together on a square woven surface of 4 square centimeters, undyed foot-rugs of manila hemp, cocoa, jute, and like fibers.	do	12.00	2 85
	With 41 to 80 threads in the warp and woof together on a square woven surface of 4 square centimeters, dyed foot rugs, as above.	do	24.00	5 71
	With 81 to 120 threads as above	do	36.00	8 56 ¹ / ₂
	More than 120 threads as above	do	60.00	14 28
	Linen, ticking, drilling, dyed, printed, bleached, also woven of dyed, printed, bleached yarn—			
	Up to 120 threads in the warp and woof together on a square woven surface of 4 square centimeters.	do	60.00	14 28

Customs duties collected under German tariff laws—Continued.

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
23	Flax, hemp, and jute—Continued. Linen, ticking, drilling, dyed, printed, bleached, also woven of dyed, printed, bleached yarn— With more than 120 threads in the warp and woof together on a square woven surface of 4 square centimeters. Damasks of all kinds.....do Ribbons, galloons, fringes, gauzes, woven bor- ders, loops, hosiery, tissues, and other goods in connection with metallic threads.....do Embroideries .....do Thread lace.....do	100 kilos	Marks. 120.00 150.00 100.00 150.00 800.00	\$14 28 35 70 23 80 35 70 190 40
24	Fruits (tropical): Fresh oranges, lemons, limes, pomegranates....do Figs, dried currants, raisins.....do Dried dates, almonds, oranges, &c.....do Fruits, preserved.....do Fresh fruit, berries, &c.....do	do do do do do	12.00 24.00 30.00 60.00 4.00	2 86 5.71 7 14 14 28 95
25	Furs: Lined furs, caps, gloves, covers, trimmings....do Finished, not lined sheep-skins, washed and dyed, not lined angora or sheep skins.....do	do do	150.00 6.00	35 70 1 43
26	Glass: Green (other), natural-colored, common hollow glass.....do White hollow glass, not figured, not ground or cut, &c.....do Window and sheet-glass in its natural color, green, partly or entirely white, uncut, not figured, if the single length and breadth taken together measure— Up to 120 centimeters.....do Above 120 to 200 centimeters.....do Above 200 centimeters.....do Mirror glass, raw, not polished.....do Plate (window) and mirror glass, cut polished, figured, ground, also colored and over laid.....do Ornaments for glass chandeliers, glass buttons, also colored, solid white glass, not especially provided for.....do Colored glass, not otherwise provided for, painted, gilded, silvered; glassware and enamel goods combined with other materials, not belonging to No. 20 (of the German tariff's fancy goods). ....do	do do do do do do do do do do do do do do do do	3.00 8.00 6.00 8.00 10.00 3.00 24.00 24.00 30.00	71 1 90 1 43 1 90 2.38 71 5 71 5 71 7 14
27	Glucose.....do	do	15.00	3 57
28	Glue.....do	do	3.00	71 1/2
29	Gunpowder.....do	do	Free.	
30	Hair: Hair of horses, raw.....do Braids of horse hair; textiles of mixed material of which either the entire warp or woof consists of horse hair.....do Human hair, raw.....do Wigs and other hair articles.....do	do do do do	Free. 48.00 100.00 200.00	 11 42 23 80 47 60
31	Hay.....do	do	Free.	
32	Hides and skins.....do	do	Free.	
33	Honey.....do	do	20.00	4 76
34	Hops.....do	do	20.00	4 76
35	Ice.....do	do	Free.	
36	India-rubber manufactures: Caoutchouc and gutta-percha.....do Caoutchouc threads.....do Coarse articles of soft caoutchouc, not lacquered, not dyed, not painted, &c.....do Fancy articles of soft caoutchouc, lacquered, painted, &c.....do Tissues of all kinds, covered or saturated, or jointed together with layers of caout- chouc, or india-rubber threads, &c.....do	do do do do do	Free. 3.00 40.00 60.00 90.00	 71 1/2 9 52 14 28 21 42
37	Iron and steel: Pig-iron.....do Wrought iron, in bars, tires, plowshares, T-iron, rails, bed-plates, and sleepers.....do	do do	1.00 2.50	24 60

Customs duties collected under German tariff laws—Continued.

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
37	Iron and steel—Continued.			
	Plates and sheets of wrought iron—		Marks.	
	Rough	100 kilos.....	3. 00	\$0 71
	Polished, varnished, lacquered, coppered, tinned, zincd, or leaded.	do	5. 00	1 19
	Wire	do	3. 00	71 ¹ / ₂
	Manufactures of iron—			
	Heavy articles—			
	Of cast iron.....	do	2. 50	60
	Of iron roughly wrought for machines and wagons, bridges, chains, anchors, &c.; railroads; anvils, vises, pulleys, &c.	do	3. 00	71 ¹ / ₂
	Rolled and drawn tubes, and pipes of wrought iron.	do	5. 00	1 19
	Other heavy articles—			
	Not otherwise provided for, also combined with wood.	do	6. 00	1 42
	Smoothed, varnished, coppered, zincd, tinned, leaded, or enameled, but not polished or lacquered, &c.	do	10. 00	2 38
	Hand-files, sword blades, planes, chisels, scissors, saws, augers, knives, and the like.	do	15. 00	3 58
	Chains and wire cables for towing purposes:		Free.	.....
	Fancy iron articles—			
	Of fine cast iron, as light ornamental castings, polished castings, art castings, malleable castings.	100 kilos	24. 00	5 71
	Wrought iron, polished or lacquered; cutlery, shears, knitting and crochet needles, sword-cutlery, &c.	do	24. 00	5 71
	Sewing needles, sheet pens, fire-arms of all kinds.	do	60. 00	14 28
38	Jewelry:			
	Articles, wholly or partly composed of precious metals, genuine pearls, corals, or precious stones, gold and silver leaf.	do	600. 00	142 80
39	Lamps:			
	Of copper or cast brass—			
	Not polished, not lacquered	do	18. 00	4 28
	Polished or lacquered	do	30. 00	7 14
	Of argenide, britannia metal, German silver, and similar alloys.	do	60. 00	14 28
	(Others, according to material.)			
40	Lead.....		Free.	.....
	Rolled lead, printing types.....	100 kilos	3. 00	71
	Rough lead articles	do	6. 00	1 43
	Fancy articles	do	24. 00	5 71
41	Leather:			
	Leather of all kinds (excepting next item) not colored, colored Russia leather, parchment, boot-tops.	do	18. 00	4 28
	Sole leather, Brussels, Danish glove-leather, cordovan, morocco, saffian, colored leather, lacquered leather.	do	36. 00	8 57
	Coarse shoemakers', saddlers', strap-makers'	do	50. 00	11 90
	Fancy shoemakers', saddlers', strap-makers'	do	70. 00	16 66
	Gloves.....	do	100. 00	23 80
42	Lime and cement		Free.	.....
43	Malt liquors, beers of all kinds.....	100 kilos.....	4. 00	.....
44	Medical instruments		Free.	.....
45	Naval stores resin, tar, turpentine, and pitch		Free.	.....
46	Oil cake and meal		Free.	.....
47	Oils:			
	Animal.....		Free.	.....
	Mineral, raw, and refined.....	100 kilos.....	6. 00	1 42
	Mineral lubricating oils	do	10. 00	2 38
	Vegetables of all kinds in bottles and jars.....	do	20. 00	4 76
	Table oils: Olive, poppy, sesame, ground-nut, beech-nut, and sunflower oils in casks.	do	10. 00	2 38
	Linseed oil, cotton-seed oil, oleic acid.....	do	4. 00	95
	Olive, castor-oil in casks, adulterated by customs officers.	do	2. 00	47 ¹ / ₂
	Palm and cocoanut oil	do	2. 00	47 ¹ / ₂
	Other oil in casks	do	9. 00	2 14

Customs duties collected under German tariff laws—Continued.

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
48	Paraffine and wax:		<i>Marks.</i>	
	Paraffine	100 kilos	10.00	\$2 38
	Wax	do	15.00	3 57
49	Paints:			
	Skin powders, not perfumed		Free.	.....
	Paints perfumed	100 kilos	100.00	23 80
50	Paper:			
	Unbleached or bleached, half manufactured goods from rags.		Free.	.....
	Half-manufactured materials for paper-making; gray blotting-paper; paste-board, exclusive of polished and leather card-board; slate paper, &c.	100 kilos	1.00	23 ¹ / ₂
	Packing-paper, unpolished	do	4.00	95
	Packing-paper, polished; glance and leather card-board; pressing-board.	do	6.00	1 42
	Printing, writing, blotting, and silk paper; also lithographed, printed, ruled, for notes, labels, &c.	do	10.00	2 38
	Molded work of papier-maché, not painted or lacquered.	do	4.00	95
	Manufactures of paper, paste-board, papier-maché, lacquered or painted.	do	12.00	2 85
	Manufactures of above-named materials in combination with other materials.	do	24.00	5 71
51	Plated ware:			
	Articles wholly or partly of amber, celluloid, ivory, agate, jet, lava, meerschaum, mother-of-pearl, and tortoise shell of not precious metals gilded or silvered or covered with gold or silver, &c.	do	200.00	47 60
52	Provisions:			
	Meat cut up for sale, fresh and prepared meat extracts, and condensed beef juices for table.	do	20.00	4 76
	Oleomargarine	do	20.00	4 76
	Lard	do	10.00	2 38
	Butter, also artificial	do	20.00	4 76
	Cheese	do	20.00	4 76
53	Quicksilver		Free.	.....
54	Seeds:			
	Not otherwise provided for, dried, baked, powdered.	100 kilos	4.00	95
	For medicinal use		Free.	.....
	Rape, rape-seed, poppy, sesame, ground-nuts, and other oil fruits, not otherwise provided for.	100 kilos	2.00	47 ¹ / ₂
	Linseed, cotton-seed, castor-beans, palm-kernels, and koprah.		Free.	.....
	Anise, coriander, fennel, cumin	100 kilos	3.00	35 ¹ / ₂
	Other seeds (as agricultural produce)		Free.	.....
55	Soap:			
	Green, black, and other barrel soap.	100 kilos	5.00	1 19
	Hard soap, not otherwise provided for.	do	10.00	2 38
	Soap in cakes, balls, tins, jars, &c., perfumed soaps.	do	30.00	7 14
56	Spirits of all descriptions	do	80.00	19 04
57	Starch	do	9.00	2 14
58	Sugar:			
	Refined	do	30.00	7 14
	Raw	do	24.00	5 71
	Sirup	do	15.00	3 57
	Molasses, entered for manufacture of spirituous liquors, under control.		Free.	.....
59	Tin:			
	Raw		Free.	.....
	Rolled	100 kilos	3.00	71
	Coarse tin articles	do	6.00	1 42
	Fancy tin articles	do	24.00	5 71
60	Tobacco:			
	Leaf, unmanufactured, also stems and tobacco juices.	do	85.00	20 23
	Manufactured—			
	Cigars, cigarettes	do	270.00	64 26
	Other	do	180.00	42 84
61	Vegetables		Free.	.....

Customs duties collected under German tariff laws—Continued.

Number.	Articles.	Unit.	Rates of duty.	Equivalent in United States currency.
62	Wood:		Marks.	
	Fire-wood; pulp; wood for the manufacture of cellulose, not over 1 meter long and not over 18 centimeters thick at the smaller end; brushwood.	.....	Free.	.....
	Timber, cabinet wood—			
	Worked or hewn with ax or saw roughly, or solely in a diagonal direction, with or without bark; oaken barrel staves.	100 kilos	.20	\$0 05
	With the ax, roughly hewn, in the direction of the longitudinal axis, or otherwise prepared, or split, than by rough-hewing; barrel staves, not coming under above; unpeeled oziars; hooping rods.	do	.40	11½
	Sawn in the direction of the longitudinal axis; unplanned boards; sawn square timber, and other sawn and cut articles.	do	1.00	23½
	Cut wood in cedars	do	1.00	25
	Bruyère (Erika) wood in cut pieces .....	.....	Free.	.....
	Coarse, rough, undyed, coopers', turners', joiners', and only planed wood-ware and wagoners' work.	100 kilos	3.00	71
	Wood cut in veneers, not glued, not tinged for parquets.	do	6.00	1 42
	Wooden furniture and parts of furniture, joiners', turners', coopers', wagoners' ware, tinged, lacquered, polished, varnished, &c.	do	10.00	2 38
	Fancy manufactures of wood (with inlaid or carved work).	do	30.00	7 14
63	Wool, raw .....	.....	Free.	.....
	Combed	100 kilos	2.00	47
	Manufactures, also mixed with cotton, linen, or metallic threads—			
	1. Cloth selvage .....	.....	Free.	.....
	2. Coarse felts, not printed, not dyed	100 kilos	3.00	71½
	3. Good rugs, containing threads of cattle hair.	do	24.00	5 71
	4. Not printed felts; not belonging under No. 2; not printed felt goods and hosiery; good rugs, &c.	do	100.00	23 80
	5. Unprinted cloths and stuffs, not included under Nos. 7 and 8—			
	If weighing more than 200 grams on the square meter of wooden surface.	do	135.00	32 13
	If weighing less than 200 grams	do	220.00	52 36
	6. Printed articles as far as they do not belong to foot-rugs, weighing more than 200 grams on the square meter of woven surface; also trimmings and button-makers' ware, plushes, weaving combined with metallic threads.	do	150.00	35 70
	Printed articles, not foot-rugs, weighing 200 grams, or less than 200 grams on the square meter of woven surface.	do	220.00	52 36
	7. Laces, tulle, or embroideries, woven shawls, with three or more colors.	do	300.00	71 40
	8. Woven shawls, with five or more colors.	do	450.00	107 10
64	Zinc:			
	Raw .....	.....	Free.	.....
	Rolled	100 kilos	3.00	71
	Coarse zinc articles	do	6.00	1 42
	Fancy zinc articles	do	24.00	5 71

GREECE.

Customs duties collected under the tariff laws of Greece.

[Prepared by Consul William H. Moffett.]

Greek currency.—Lepton, the one-hundredth part of a drachma; 5 lepta = 1 cent, nearly; 1 drachma (dr.) = 19.3 cents.

Weights and measures.—Dram = one-tenth of an ounce avoirdupois, nearly; oke (400 drams) = 43.3 ounces avoirdupois, roughly 2½ pounds; quintal = 44 okes; oke of wine = 2.829 pounds avoirdupois.

A municipal tax of 2 per cent. is to be added to the duties given in the accompanying schedule.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money.
			<i>Drachmas.</i>	
1	Agricultural implements.....		Free.....	
2	Animals, living, without exception.....		Free.....	
3	Art works:			
	Paintings unframed, statuary, casts, models, theatrical scenery, plans.....		Free.....	
	Small articles in bone, or imitation.....	Oke.....	3.00	\$0 58
	Small articles in ivory, tortoise, or rhinoceros.....	do.....	20.00	3 86
	Articles in marble (not antique statues), natural or imitation, or alabaster.....	do.....	.10	02
	Various articles of luxury.....	do.....	7.00	1 35
4	Bark and extracts:			
	Raw gums and all extracts of bark not manufactured or otherwise classed, and all substances used for dyeing and tanning, and all medicinal roots and barks.....		Free.....	
	Cork.....	Oke.....	.10	02
	Essence of lentisque.....	do.....	1.50	29
	Cinchona.....	Dram.....	.07	01½
5	Blacking for shoes, harness, &c.....	Oke.....	.30	06
6	Bones, hoofs, horns, &c.:			
	Unprepared.....		Free.....	
	Prepared bones, &c., of elephants, rhinoceros, turtles.....	Oke.....	20.00	3 86
	All other prepared bones.....	do.....	3.00	58
7	Books, maps, engravings, &c.....		Free.....	
8	Brass and manufactures of:			
	In plates or sheets, connections for machinery, tubes, and for printers' use.....		Free.....	
	Articles in rough work not specially classed, coffee mills, &c.....	Oke.....	1.00	19½
	Articles chased or enameled.....	do.....	2.00	38½
	Articles of rich ornamentation.....	do.....	3.00	58
	Cartridge cases.....	1,000	2.00	38½
9	Breadstuffs:			
	Wheat.....	Quintal.....	1.20	23
	Other cereals.....	do.....	.88	18
	Wheat flour.....	do.....	3.00	58
	Wheat flour from January 1, 1887.....	do.....	2.40	47
	Flour of all other cereals.....	do.....	1.76	34
	Rice and chestnut.....	Oke.....	.10	02
	Flour of rice and chestnut, and of barley.....	do.....	.20	04
	Biscuits—			
	Common.....	do.....	.15	03
	With sugar or butter.....	do.....	.80	16
	Dough.....	do.....	.20	04
	Farinaceous foods, sago, &c.....	do.....	.50	10
10				
11	Brooms and brushes:			
	Common brooms.....	Oke.....	.20	04
	Brooms of better quality.....	do.....	.40	08
	Brushes, shoe, scrubbing, and house-painters'.....	do.....	.20	04
	Brushes—			
	Teeth, hair, shaving.....	do.....	3.00	58
	Clothes, of vegetable fiber.....	do.....	3.00	58
	Hair or feather.....	do.....	3.00	58
	Revolving, for barbers.....	Each.....	1.00	19½
12	Candles:			
	Tallow.....	Oke.....	.20	04
	Beeswax (yellow).....	do.....	1.25	25
	Stearine.....	do.....	2.00	38½
	White wax for churches.....	do.....	4.00	77

Customs duties collected under the tariff laws of Greece—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money.
13	Carriages and horse cars:			
	Carriages—		<i>Drachmas.</i>	
	Two-wheeled	Each	100.00	\$19 30
	Four-wheeled	do	300.00	57 90
	Carts—			
	Two-wheeled	do	20.00	3 86
	Four-wheeled	do	40.00	7 72
	Hand carts, perambulators, &c.	do	10.00	1 93
	Wagons for ice, furniture, brewers, and grocers	do	30.00	5 79
	Horse cars for passengers or merchandise, 10 per cent. ad valorem.			
14	Cars (railroad, steam), 10 per cent. ad valorem.			
15	Chemicals:			
	Not specially named		Free	
	Hair dyes	Oke	5.00	96½
	Volatile essences	do	3.00	58
	Drugs in general	do	.10	02
	Drugs patented	do	8.00	1 54
	Sirups of all kinds	do	2.00	38½
	Opium	do	6.00	1 16
	Musk	Dram	.55	11
	Saffron	do	.02	00½
16	Clocks and watches:			
	Clocks and parts	Oke	1.50	29
	Clocks, ornamental, and movements	do	2.50	48
	Clocks for public buildings		Free	
	Watches—			
	Gold or gilt	Each	5.00	96½
	Silver or plated	do	2.00	38½
	Other metal	do	1.00	19½
	Watch-cases—			
	Gold or gilt	do	3.50	67
	Silver or plated	do	1.00	19½
	Other metal	do	.50	10
	Watch movements	do	1.50	29
17	Coal		Free	
18	Copper:			
	Ore, ingots, bars, plates for sheathing, wire, nails, screws, tubes for printing and engraving.		Free	
	Various articles of copper or bronze, not specially named.	Oke	1.00	19½
	Ornamental, carved, or gilt	do	2.00	38½
	Ornamental, combined with more precious metals	do	3.00	58
19	Cotton and manufactures:			
	Raw material		Free	
	Cotton wool in colors	Oke	1.00	19½
	Yarn—			
	Unbleached to Eng. 24	do	.60	12
	Unbleached above Eng. 24	do	.80	16
	Bleached to Eng. 24	do	.66	13½
	Bleached above Eng. 24	do	.88	18
	Thread dyed—			
	To Eng. 24	do	.80	16
	Above Eng. 24	do	1.04	21
	In oil	do	1.50	30
	Thread—			
	Twisted, add to above 20 per cent.			
	On spools or skeins	do	1.20	24
	Cloth—			
	Unbleached, up to 28 threads in 5 meters square	do	.66	13½
	28 to 36 threads in 5 meters square	do	.80	16
	36 to 44 threads in 5 meters square	do	.96	19
	44 to 56 threads in 5 meters square	do	1.12	22
	Bleached, add to above 25 per cent.			
	Dyed, add to above 60 per cent.			
	Webbing and wick	do	1.00	19½
	Coarse cloth for servants' use	do	2.00	38½
	Muslins, cambrics, net, handkerchiefs, embroidery	do	6.00	1 16
	Velveteen, trimmings, chintz above threads, table covering, napkins.	do	3.00	58
	Canvas for sails	do	.20	04
	Manufactured clothing—			
	For men and boys, add to material 50 per cent.			
	For women and girls	do	15.00	2 90
20	Earthen, stone, and china ware:			
	Pottery of all kinds—			
	Unglazed		Free	
	Glazed	Oke	.04	00½
	Enameled one color	do	.14	02½
	In various colors, in relief, or gilt	do	.50	10

Customs duties collected under the tariff laws of Greece—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money
20	Earthen, stone, and china ware—Continued.			
	Porcelain—		<i>Drachmas.</i>	
	Plain.....	Oke.....	1.00	\$0 19 ³ / ₁₆
	Gilt or in relief.....	do.....	2.00	38 ³ / ₁₆
	China and Japanese ware and articles of luxury.....	do.....	7.00	1 35
21	Fertilizers.....		Free.....	
22	Fish:			
	Fresh.....		Free.....	
	Salt, dried, or smoked (except the following).....	Oke.....	.20	04
	Dried or smoked sturgeons, shrimps, lobsters, sardines.....	do.....	1.00	19 ³ / ₁₆
	Stock and codfish.....	do.....	.10	02
	Eels, cuttle-fish, oysters.....	do.....	.50	10
	Caviare—			
	Black.....	do.....	2.00	38 ³ / ₁₆
	Red.....	do.....	.20	04
23	Flax, hemp, jute, and manufactures:			
	Raw material, cordage, wads, fish-nets.....		Free.....	
	Sacking, twine.....	Oke.....	.25	05
	Mats, canvas.....	do.....	.20	04
	Thread, sewing and embroidery.....	do.....	1.44	28
	All other threads, hemp or jute.....	do.....	.40	08
	Linen—			
	Up to 8 threads, in 5 millimeters square.....	do.....	.28	05 ³ / ₁₆
	8 to 12 threads in 5 square millimeters.....	Oke.....	1.10	21 ³ / ₁₆
	Over 12 threads.....	do.....	3.00	58
	Lace and embroidery.....	do.....	30.00	5 79
	Net, gauze, and other loose tissues.....	do.....	16.00	3 09
	Trimmings and underclothing.....	do.....	6.00	1.16
	Manufactured clothing—			
	For men and boys, add to material 50 per cent.			
	For women and girls, plain.....	do.....	20.00	3.86
	For women and girls, embroidered.....	do.....	30.00	5.79
24	Fruits, preserved:			
	Fresh, in general.....	do.....	.02	00 ³ / ₁₆
	Dried, in skin or shell.....	do.....	.10	2
	Dried, without skin or shell.....	do.....	.40	8
	With soft shell.....	do.....	.30	6
	Canned, jellies.....	do.....	2.00	38 ³ / ₁₆
	In wine or alcohol, same duty as the spirit.			
	For distilling or brewing, raisins and figs.....		Free.....	
25	Furs, manufactured, 20 per cent. ad valorem.			
26	Glass and manufactures:			
	Broken glass, glass powder.....		Free.....	
	Common bottles (not white) demijohns, &c.....	Oke.....	.06	1 ¹ / ₁₆
	Glassware, white, not specially classed—			
	Plain, pressed, or with baked color.....	do.....	.20	4
	Cut or chased.....	do.....	.50	10
	Cut or chased and tinted.....	do.....	.80	16
	Window glass—			
	Common.....	do.....	.15	3
	Stained or ground.....	do.....	.30	6
	Plate.....	do.....	.40	8
	Watch crystals, lenses.....	do.....	3.00	58
	Beads, imitation stones, lusters, glass thread, balls, pendants, &c.....	do.....	.70	14
	Spectacles, optical instruments.....		Free.....	
	Opera glasses.....	Oke.....	4.00	77
	Mirrors—			
	Small, in common frames.....	do.....	.50	10
	In gilt frames.....	do.....	1.00	19 ³ / ₁₆
	Not framed—			
	Up to $\frac{1}{2}$ square meter.....	do.....	1.00	19 ³ / ₁₆
	Up to 1 square meter.....	do.....	1.20	24
	Up to $1\frac{1}{2}$ square meters.....	do.....	1.40	28
	Up to 2 square meters.....	do.....	1.60	32
	Up to $2\frac{1}{2}$ square meters.....	do.....	1.80	35
	Up to 3 square meters.....	do.....	2.00	38 ³ / ₁₆
	Up to $3\frac{1}{2}$ square meters.....	do.....	2.20	43
	Up to 4 square meters.....	do.....	2.40	48
	Above 4 square meters.....	do.....	2.60	51
	Framed, double the above.			
	Articles in glass mixed with other material not specially classed, 20 per cent. ad valorem.	do.....		
27	Glucose.....	do.....	.37	7 ³ / ₁₆
28	Glue:			
	Fish glue, mucilage.....	do.....	.20	4
	Gelatine, refined.....	do.....	1.00	19 ³ / ₁₆
	Wafers.....	do.....	2.00	38 ³ / ₁₆
29	Gunpowder:			
	For army, sportsmen, fireworks (also dynamite).....	do.....	1.20	24
	Mining powder.....	do.....	.20	4

Customs duties collected under the tariff laws of Greece—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money.
30	Hair:		<i>Drachmas.</i>	
	Unprepared		Free	
	Human hair, prepared	Dram	.12	\$0 02½
	Carpets, rugs, &c., of dogs' and calves' hair	Oke	.40	8
31	Hay		Free	
32	Hides and skins, raw or in salt		Free	
33	Honey		Free	
34	Hops		Free	
35	Ice		Free	
36	India-rubber and manufactures:			
	Raw material, plates, bands, tubes, hat-brims, diving suits.		Free	
	Overshoes	Oke	3.00	58
	Webbing, masques	do	2.00	38½
	Water-proof clothing and objects not specially classed	do	1.00	19½
37	Iron and steel and manufactures:			
	Iron ore, bars, plates, iron for naval construction, sheets, stanchions, steam boilers, motors and accessories, watering machines, fire engines, sewing-machines, divers' helmets, steel bars, rails, plates, and guns for army use.	do	Free	
	Common articles of cast-iron	Oke	.10	02
	Decorative articles for table use, buttons, chandeliers	do	.40	08
	Articles wrought—			
	With varnish or enamel	do	.25	05
	Gilt or galvanized	do	.50	10
	Iron safes	do	.20	04
	Metallic plates, mannikins	do	.30	06
	Nails, screws, tacks	do	.15	03
	Coffee-mills, sprinklers, scales	do	.40	08
	Padlocks	do	.60	12
	Knives with iron handles	do	.25	05
	Roasters, meat-cutters, and other domestic uses	do	1.00	19½
	Trays, painted or varnished	do	1.50	29
	Cages, refrigerators, wire safes, dish covers	do	2.00	38½
	Springs for carriages, &c	do	.10	02
	Articles of steel not specially classed—			
	Of common work	do	.50	10
	If finely wrought	do	2.00	38½
	Pocket knives—			
	Common	do	4.00	77
	Handles of ivory, pearl, tortoise, &c	do	10.00	1 93
	Table cutlery, common	do	1.00	19½
	Table cutlery and razors, fine	do	8.00	1 54
	Hunting knives	Each	3.00	58
	Foils, daggers	Oke	5.00	96½
	Swords, lances, &c	Each	1.00	19½
	Guns, hunting—			
	1 barrel, muzzle	do	2.00	38½
	1 barrel, breech	do	10.00	1 93
	2 barrels, muzzle	do	12.00	2 32
	2 barrels, breech	do	20.00	3 86
	Pistols, single barrel	Pair	5.00	96½
	Revolvers	Each	8.00	1 54
	Detached pieces, guns, &c	Oke	.60	12
38	Jewelry:			
	Unset stones, pearls, &c	do	Free	
	Imitation stones:			
	In common settings	do	3.00	58
	In silver	Dram	.06	01½
	Set in gold or platinum	do	.40	08
	Various articles in coral and amber	do	.10	02
	(Articles in ivory, pearl, tortoise, &c., 20 per cent. ad valorem.)			
39	Lamps:			
	Of all sorts, not specially classed, of tin, glass, terra-cotta, porcelain, &c	Oke	1.00	19½
	Of tin or iron	do	.40	08
	Of tin, plated or chased	do	10.00	1 93
	Gilt	Dram	.12	02½
	Silver	do	.08	01½
	Gold or platinum	do	.40	08
	For carriages, cars, &c.—			
	Common	Oke	2.00	38½
	Fine	do	3.00	58
	Japanned	do	7.00	1 35
	Of bone, mixed with common metal	do	3.00	58
	Of ivory, plain or mixed	do	20.00	3 86
	Of porcelain, painted	do	2.00	38½

Customs duties collected under the tariff laws of Greece—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money.
40	Lead and manufactures:		<i>Drachmas.</i>	
	Ore, pewter in bars or sheets, type and printers' ornaments.....		Free	
	Pipe, plates, roofing in rolls.....	Oke.....	.10	\$0 02
	Shot, bullets.....	do.....	.20	04
	All other articles, lead toys, &c.....	do.....	1.00	19 ³ / ₁₆
41	Leather and manufactures:			
	Bands for machinery and for insides of hats.....		Free	
	Sole leather.....	Oke.....	1.00	19 ³ / ₁₆
	Calf skins, morocco, goat, hare, beaver, sheep, Russian, kip, colored or varnished.....	do.....	2.50	48
	Camel, leather and varnished skins.....	do.....	4.00	77
	Kid, musk-rat, and other rare animals.....	do.....	6.00	1 16
	Shoes—			
	Rough, laborers, army use, and hunting.....	do.....	2 70	53
	For ordinary use.....	do.....	8.00	1 54
	Slippers embroidered.....		30.00	5 79
	Belts, straps, army, hunting.....	do.....	4.80	93
	Flasks.....	do.....	.20	*04
	Pipe-stems, bellows, satchels, writing-cases.....	do.....	1.00	19 ³ / ₁₆
	Saddles.....	Each.....	15.00	2 90
	Harness, holsters, saddle-bags, &c.....	Oke.....	3.00	58
	Portfolios, purses, note-books, and other small articles—			
	Common leather.....	do.....	5.00	96 ¹ / ₁₆
	Fine leather.....	do.....	20.00	3 86
	Gloves without fur.....	Pair.....	.30	06
	Valises—			
	Plain without toilet.....	Oke.....	2.00	38 ¹ / ₁₆
	Ornamented with metal.....	do.....	6.00	1 16
	With toilet, ordinary.....	Each.....	5.00	96 ¹ / ₁₆
	With toilet, fine leather.....	do.....	20.00	3 86
	Toilet cases, 20 per cent. ad valorem.			
42	Lime and cement.....		Free	
43	Malt liquors:			
	Beer in barrels.....	Oke.....	.35	07
	Beer in bottles.....	do.....	.60	12
44	Medical instruments.....		Free	
45	Naval stores, resin, tar, turpentine, &c.....		Free	
46	Oil cake and meal, not named.			
47	Oils, animal, mineral, vegetable:			
	Olive, for table use.....	Oke.....	.50	10
	Ethereal oils.....	do.....	3.00	58
	Oil empyreumatical.....	do.....	.30	06
	Mineral (except petroleum).....	do.....	.43	08 ¹ / ₁₆
	Petroleum, Government monopoly (prohibited).			
	All other oils.....	do.....	.20	04
48	Paraffine and wax:			
	Beeswax, yellow, in bulk.....	do.....	.70	14
	White wax, sealing-wax, and stearine.....	do.....	1.20	23
	White wax in rolls.....	do.....	4.00	77
	Paraffine and all other artificial wax.....	do.....	.68	13 ¹ / ₁₆
49	Raw colors and all vegetable or mineral colors not fluid.....		Free	
	Colors prepared in oil.....	Oke.....	.30	06
	Varnish:			
	In oil.....	do.....	.50	10
	In alcohol.....	do.....	.80	16
	Aniline colors.....	do.....	8.00	1 54
50	Paper and manufactures:			
	Pulp in all forms, sand-paper, tarred-paper, and drawing and music paper.....		Free	
	Blotting-paper:			
	In rolls.....	Oke.....	.08	01 ¹ / ₁₆
	Red, tissue, and printing.....	do.....	.16	03 ¹ / ₁₆
	Writing paper, ordinary and for binding.....	do.....	.30	06
	Law paper, note, and paper hangings.....	do.....	.60	12
	For cigarettes and stamps, monopoly (prohibited).			
	For promissory notes, ornamental envelopes.....	do.....	2.00	38 ¹ / ₁₆
	Paste-board boxes.....	do.....	1.00	10 ³ / ₁₆
	Articles of luxury, toys, collars, cuffs, masques.....	do.....	4.00	77
	Boxes for confectionery.....	do.....	5.00	96 ¹ / ₁₆
	Articles of papier-maché, except buttons.....	do.....	3.00	58
	Playing cards.....	do.....	10.00	1 93
51	Plated ware.....	do.....	10.00	1 93
52	Provisions:			
	Meats, fresh, smoked, or in pickle, and eggs (except the following).		Free	
	Tongues, hams, sausages, meat extracts, canned meats, and all prepared animal foods not specially classed.	do.....	1.00	19 ³ / ₁₆

Customs duties collected under the tariff laws of Greece—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money.
52	Provisions—Continued.			
	Lard—		<i>Drachmas.</i>	
	For cooking	Oke	.50	\$0 10
	For other uses	do	.20	04
	Condensed milk	do	1.00	19 ¹⁰ / ₁₀₀
	Butter—			
	Salt, for cooking	do	.60	12
	Table use	do	1.20	23
	Cheese—			
	In general	do	.80	16
	Cretan	do	.26	05 ¹ / ₁₀
53	Quicksilver	do	.10	02
54	Seeds		Free	
55	Soap :			
	Laundry	Oke	.20	04
	Toilet, ordinary, without perfume	do	.40	08
	Toilet	do	5.00	96 ¹ / ₁₀
56	Spirits :			
	Above 70 per cent	do	1.00	19 ¹⁰ / ₁₀₀
	Under 70 per cent	do	.70	14
	Liqueurs	do	2.00	38 ² / ₁₀
	Wine—			
	In barrels	do	2.00	38 ² / ₁₀
	Bottled (still)	do	3.00	58
	Bottled (sparkling)	do	5.00	96 ¹ / ₁₀
57	Starch	do	.20	04
58	Sugar, molasses :			
	Cane and molasses		Free	
	Unrefined	Oke	.20	04
	Refined	do	.37	07 ² / ₁₀
	Sweetmeats	do	3.00	58
59	Tin		Free	
60	Tobacco, leaf, cigars, cigarettes :			
	Leaf	Oke	6.00	1 16
	For narghile	do	5.00	96 ¹ / ₁₀
	In rolls, for snuff or chewing	do	8.00	1 54
	Cut for cigarettes	do	11.00	2 12
	Cigars	do	14.00	2 70
61	Vegetables, fresh		Free	
	Potatoes	Oke	.02	00 ² / ₁₀
	Olives	do	.06	01 ¹ / ₁₀
	Truffles, canned vegetables	do	1.00	19 ¹⁰ / ₁₀₀
62	Wood, and manufactures :			
	For fuel, naval construction, oars, pumps, and other articles for use of ships (not furniture or articles of luxury).		Free	
	For building purposes	Oke	.02	00 ² / ₁₀
	Hoops	do	.00 ¹ / ₁₀	00 ¹ / ₁₀
	Staves, clap-boards, and beech-wood in general	do	.01	00 ¹ / ₁₀
	Walnut, box, ebony, mahogany	do	.06	01 ¹ / ₁₀
	Veneering	do	.30	06
	Articles of common wood, gilt or chased, canes, beads, spindles, spinning wheels, &c.	do	1.50	29
	Wooden toys	do	4.00	77
	Other articles of common wood, not specially classed, trunks, bowls, safes, &c.	do	.10	02
	Pipe bowls of chibouques	do	6.00	1 16
	Articles in fine wood, cedar trunks, or of palm, canes, &c.	do	3.00	58
	Furniture—			
	Common, not covered	do	.10	02
	Covered	do	.20	04
	Carved or gilt, not covered	do	.40	08
	Carved, covered	do	.60	12
	Fine wood, not covered	do	.80	16
	Covered plain	do	1.00	19 ¹⁰ / ₁₀₀
	Richly covered	do	1.60	31
	Gilt, chased, or ornamental—			
	Not covered	do	2.00	38 ² / ₁₀
	Partly covered	do	3.00	58
	Richly covered	do	4.00	77
63	Wool :			
	In natural condition		Free	
	Woolen yarn, unbleached, and felt for men's hats		Free	
	Yarn, bleached or dyed	Oke	5.40	1 04
	Coarse cloth, serge, belts, blankets	do	.50	10
	Carpets—			
	Rugs, printed felt	do	1.20	23
	Rugs, woven or dyed	do	3.00	58
	Persian or Georgian	do	6.00	1 16
	For hangings	do	10.00	1 93

Customs duties collected under the tariff laws of Greece—Continued.

Number	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States money.
63	Wool—Continued.		<i>Drachmas.</i>	
	Flannels in colors—			
	Coarsely woven, stockings, shawls, haver-sacks, sailors' caps, bed covers, &c.	Oke	1. 60	\$0 31
	Finely woven.....	do	5. 00	96½
	Trimmings, fringes, traveling rugs	do	6. 00	1 16
	Shawls, cashmere or merino	do	12. 00	2 32
	Tissues to weight of—			
	100 grams per square millimeter	do	12. 00	2 32
	200 grams per square millimeter.....	do	8. 00	1 54
	350 grams per square millimeter.....	do	5. 00	96½
	Above 350 grams per square millimeter.....	do	3. 00	58
	Part cotton up to 200 grams per square millimeter.....	do	1. 75	34
	Above 200 grams per square millimeter.....	do	1. 00	19½
	Clothing for men and boys—			
	Light, for summer	do	6. 50	1 25
	Heavy, for winter	do	4. 50	87
	Part cotton.....	do	2. 50	48
	For women and girls.....	do	15. 00	2 90
	Felt hats for women.....	Each....	1. 00	19½
64	Zinc:			
	In blocks, pigs, or sheets.....		Free .....	.....
	Articles in coarse work.....	Oke.....	. 40	08
	Articles in fine work or mixed with other metals.....	do	1. 00	10½

THE NETHERLANDS.

Tariff of import duties.

[Compiled by Consul Richard Stockton.]

Number.	Articles.	Unit.	Duty.	Equivalent in United States money.
			<i>Guilders.</i>	
1	Agricultural implements.....		Free.....	
2	Animals:			
	Cattle.....		Free.....	
	Hogs.....		Free.....	
	Horses.....		Free.....	
	Mules.....		Free.....	
	Sheep.....		Free.....	
	All others.....		Free.....	
3	Art works.....		Free.....	
4	Bark and extract.....		Free.....	
5	Blacking.....	Value.....	5 per cent.....	
6	Bones, hoofs, horns, &c.....		Free.....	
7	Books, maps, engravings.....		Free.....	
8	Brass.....		Free.....	
	Manufactures.....	Value.....	5 per cent.....	
9	Breadstuffs:			
	Barley.....		Free.....	
	Bread and biscuits.....		Free.....	
	Sweet biscuits.....	100 kilos.....	25. 00	\$10 00
	Indian corn.....		Free.....	
	Oats.....		Free.....	
	Rye.....		Free.....	
	Wheat.....		Free.....	
	Flour.....		Free.....	
10				
11	Brooms and brushes.....	Value.....	5 per cent.....	
12	Candles:			
	Tallow.....	100 kilos.....	3. 00	1 20
	Wax.....	Value.....	5 per cent.....	
13	Carriages and horse-cars.....	do.....	5 per cent.....	
14	Cars, railroad, steam.....	do.....	5 per cent.....	
15	Chemicals.....		Free.....	
16	Clocks and watches.....	Value.....	5 per cent.....	
17	Coal.....		Free.....	
18	Copper:			
	Ore.....		Free.....	
	Ingots, bar.....		Free.....	
	Sheet.....		Free.....	
	Copper ware.....	Value.....	5 per cent.....	
19	Cotton.....		Free.....	
	Manufactures.....	Value.....	5 per cent.....	
20	Earthen, stone, and china ware.....	do.....	5 per cent.....	
21	Fertilizers.....		Free.....	
22	Fish.....		Free.....	
	Canned.....	100 kilos.....	25. 00	10 00
23	Flax, hemp, and jute.....		Free.....	
	Manufactures.....	Value.....	5 per cent.....	
24	Fruit:			
	Fresh or dried.....	do.....	5 per cent.....	
	In brandy, vinegar, or brine.....	do.....	10 per cent.....	
	In sirup or sugar.....	100 kilos.....	18. 00	7 20
	Canned.....	do.....	25. 00	10 00
25	Furs.....	Value.....	5 per cent.....	
26	Glass, manufactures.....	do.....	5 per cent.....	
27	Glucose.....		Free.....	
28	Glue.....		Free.....	
29	Gunpowder.....	100 kilos.....	5. 00	2 00
30	Hair.....		Free.....	
	Manufactures.....	Value.....	5 per cent.....	
31	Hay.....		Free.....	
32	Hides and skins.....		Free.....	
	Manufactures.....	Value.....	5 per cent.....	
33	Honey.....	100 kilos.....	2. 50	1 00
34	Hops.....		Free.....	
35	Ice.....		Free.....	
36	India-rubber manufactures.....	Value.....	5 per cent.....	

Tariff of import duties—Continued.

Number.	Articles.	Unit.	Duty.	Equivalent in United States money.
			<i>Guilders.</i>	
37	Iron and steel		Free	
	Manufactures	Value	5 per cent.	
	Cannon and field-pieces	100 kilos	1. 25	\$0 50
38	Jewelry		Free	
39	Lamps	Value	5 per cent.	
40	Lead		Free	
	Manufactures	Value	5 per cent.	
41	Leather		Free	
	Manufactures	Value	5 per cent.	
42	Lime and cement		Free	
43	Malt liquors	Hectoliter	3. 00	1 20
44	Medical instruments	Value	5 per cent.	
45	Naval stores:			
	Rosin		Free	
	Tar		Free	
	Turpentine and pitch		Free	
46	Oil cakes and meal		Free	
47	Oils:			
	Animal		Free	
	Mineral	100 kilos	. 55	22
	Vegetable	do	. 55	22
48	Paraffine and wax		Free	
49	Paints:			
	In oil	Value	5 per cent.	
	Other		Free	
50	Paper	Value	5 per cent.	
	Manufactures	do	5 per cent.	
51	Plated ware	do	5 per cent.	
52	Provisions:			
	Meat of all kinds not otherwise provided for—			
	Fresh or salt	100 kilos	6. 00	2 40
	Smoked or dried	do	8. 00	3 20
	Mutton and pork—			
	Salt	100 kilos	1. 00	40
	Smoked or dried	do	1. 25	50
	Fresh		Free	
	Oleomargarine		Free	
	Lard		Free	
	Butter		Free	
	Cheese	100 kilos	5. 00	2 00
53	Quicksilver		Free	
54	Seeds		Free	
55	Soap	100 kilos	4. 50	1 80
	Perfumed	do	6. 00	2 40
56	Spirits	Hectoliter	3. 50	1 40
57	Starch		Free	
58	Sugar		Free	
	Molasses	100 kilos	6. 00	2 40
59	Tin	Value	5 per cent.	
60	Tobacco:			
	Leaf	100 kilos	. 70	28
	Manufactured	do	12. 00	4 80
	Cigars	do	40. 00	16 00
	Cigarettes	do	40. 00	16 00
61	Vegetables:			
	Fresh and dried		Free	
	In brine	Value	5 per cent.	
	Canned	100 kilos	25. 00	10 00
62	Wood		Free	
	Manufactures	Value	5 per cent.	
63	Wool		Free	
64	Zinc		Free	
	Manufactures	Value	5 per cent.	

Internal-revenue tax which must be paid in addition to the import duties given in the above list for the articles mentioned therein.

Number.	Articles.	Standard.	Tax.	Equivalent in United States money.
			<i>Guilders.</i>	
55	Soap	100 kilos....	10. 00	\$4 00
56	Spirits	Hectoliter of 50 per cent.	60. 00	24 00
58	Sugar:			
	Candy—			
	First class	100 kilos....	31. 86	12 75
	Second class.....	do	28. 89	11 56
	Loaf sugar, and all other kinds not otherwise pro- vided for.	do	27. 00	10 80
	Raw sugar of higher degree than 99 per cent.....	do	27. 00	10 80
	Raw sugar of less degree than 99 per cent.....	100 kilos per degree.	. 27	10. 8
	Bastard sugar.	do	. 27	10. 8
	Melada, including all sugar juices, unfinished sirup and molasses, which contain more than 10 per cent. firm ingredients of sugar, or, in liquid state, have a sugar degree of more than 50 per cent.	100 kilos....	18. 00	7 20
	Grape sugar.....	do	18. 00	7 20

The full tariff of The Netherlands was printed in Consular Reports No. 69, p. 197.

ITALY.

Customs duties collected under the present tariff laws of Italy.

[Prepared by Consul-General William L. Alden.]

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
1	Agricultural implements:		<i>Francs.</i>	
	Wood, neither polished nor painted		Free	
	Rough cast-iron	100 kilos..	4.00	\$0 77½
	Smooth cast-iron	do	5.00	96½
	Scythes and sickels of steel or iron or both	do	10.00	1 93
	All other implements of iron or steel or both	do	12.00	2 31½
	Agricultural machines and parts of machines	do	6.00	1 15½
	All other implements of wood	do	8.00	1 54½
2	Animals:			
	Bulls and oxen	Each.....	15.00	2 89½
	Cows	do	7.50	1 44½
	Calves	do	2.00	38½
	Heifers and young bulls that have not entirely lost their milk teeth.	do	5.00	96½
	Hogs weighing 20 kilos (44.080 pounds) or less	do	.75	14¼
	Hogs weighing more than 20 kilos (44.080 pounds)	do	2.50	48½
	Mules	do	6.00	1 15½
	Horses		Free	
	Sheep	do	.20	3½
	Asses	do	1.50	28½
3	Art works		Free	
4	Bark:			
	Dyeing and tanning, not ground	100 kilos..	Free	
	Dyeing and tanning, ground	do	2.00	36½
	The aromatic laurel of India	do	120.00	23.16
	Cocoa	do	80.00	15.44
	Peruvian		Free	
	Other medicinal barks	100 kilos..	10.00	1 93
	Extracts for dyeing	do	12.00	2 41½
	Extracts for tanning		Free	
	Salt of quinine	100 kilos..	5.00	96½
	Powdered quinine and extracts of quinine, comprising elixirs, sirups, and wine containing quinine.	do	120.00	23.16
	Arseniate phosphate, milk sulphate, citrate and valerian- ate of quinine.	do	5.00	96½
	Other medicinal extracts of barks	do	120.00	23 16
5	Blacking	do	5.00	96½
6	Bones, hoofs, and horns:			
	Whalebone prepared for umbrellas	do	30.00	5 79
	Whalebone prepared or cut for other purposes	do	60.00	11 58
	Whalebone, crude or unprepared		Free	
	Calcined bones (for fertilizing)		Free	
	Bone black	100 kilos..	.50	9½
	Bones (crude) not hereinabove named		Free	
	Cuttle-fish bone		Free	
	Bones, manufactured	100 kilos..	60.00	11 58
	Horn of rhinoceros, crude		Free	
	Horn of all other animals, crude		Free	
	Horn, polished	100 kilos..	60.00	11 58
	Horn, scrapings and clippings of		Free	
	Horn, burnt	100 kilos..	.50	9½
	Hoofs, good only for fertilizers		Free	
	Hoofs, all other		Free	
7	Books, maps, and engravings:			
	Blank books—			
	Unbound or bound in cloth or boards	100 kilos ..	10.00	1 93
	Bound in leather or parchment	do	15.00	2 89½
	Bound in any other way, including velvet, silk, ivory, mother-of-pearl, tortoise shell, and Russia leather, or ornamented with gold, silver, or metal, gilded or silvered.	do	100.00	19 30
	Printed books—			
	Unbound or bound in paper		Free	
	Bound in board	100 kilos..	12.00	2 31½

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
7	Books, maps, and engravings—Continued.			
	Printed books—Continued.		<i>Francs.</i>	
	Bound in leather, cloth, and parchment.....	100 kilos ..	20.00	\$3 86
	Bound in every other way, including velvet, silk, ivory, mother-of-pearl, tortoise shell, and Russian leath- er, or ornamented with gold, silver, or metal, gilded or silvered.	do	100.00	19 30
	Maps—			
	Geographical.....		Free.....	
	In relief, also with frames.....	100 kilos..	60.00	11 58
	(Bound, classed as printed books and taxed according to the binding.)			
	Engravings.....	do	50.00	9 66
	Framed, and with glass of common quality.....	do	60.00	11 58
	Framed, and with glass of fine quality.....	do	100.00	19 30
8	(Brass, classed with copper and taxed as such.)			
9	Breadstuffs:			
	Oats.....	Ton.....	11.50	2 21 ⁹⁵ / ₁₀₀
	Rye.....	Ton.....	14.00	2 70
	Wheat.....		Free.....	
	Barley.....	Ton.....	11.50	2 21 ⁹⁵ / ₁₀₀
	Indian corn.....	100 kilos..	2.77	53
	Flour.....	do	5.50	1 06 ²⁵ / ₁₀₀
	Bread and sea biscuit.....		Free.....	
10	Bricks.....		Free.....	
11	Brooms:			
	Common, of twigs.....		Free.....	
	Common, of broom-corn, or of twigs finished with leather ..	100 kilos..	60.00	11 58
	Fine, of other materials.....	do	100.00	19 30
	Broom-corn and twigs for brooms.....		Free.....	
12	Candles:			
	Wax, yellow.....	100 kilos..	20.00	3 86
	Wax, white.....	do	30.00	5 79
	Stearine.....	do	15.00	2 89 ¹ / ₂
	Paraffine.....	do	15.00	2 89 ¹ / ₂
	Fossil or vegetable wax.....	do	15.00	2 89 ¹ / ₂
	Tallow.....	do	1.00	19 ³ / ₁₀
	Spermaceti, also when mixed with wax or tallow	do	40.00	7 72
	Palm or cocoa.....	do	1.00	19
13	Carriages and horse-cars:			
	Carriages, two-wheeled.....	Each.....	33.00	6 37
	Carriages, with more than two wheels and not more than five springs.	do	110.00	21 23
	Carriages, with more than two wheels and five springs	do	330.00	65 89
	Horse-cars for freight and baggage.....	100 kilos..	7.00	1 35 ¹ / ₁₀
	Horse-cars for passengers.....	do	13.00	2 50 ⁹ / ₁₀
14	Railway cars:			
	Freight and baggage.....	do	7.00	1 35 ¹ / ₁₀
	Passenger.....	do	13.00	2 50 ⁹ / ₁₀
15	Chemicals:			
	Acid—			
	Arsenious.....	do	2.00	38 ³ / ₈
	Boracic.....		Free.....	
	Gallic, tannic, and impure acetic.....		Free.....	
	Nitric or hydrochloric.....	100 kilos ..	1.00	19 ³ / ₁₀
	Sulphuric.....	do	.50	9 ⁶⁵ / ₁₀₀
	Stearic, not manufactured.....	do	8.00	1 54 ¹ / ₂
	Tartaric.....	do	8.00	1 54 ¹ / ₂
	All others.....	do	10.00	1 93
	Ammonia, potash, and pure caustic soda.....	do	5.00	96 ¹ / ₂
	Impure caustic soda.....	do	.50	9 ⁶⁵ / ₁₀₀
	Salts of quinine (see Bark and Extracts).....	Kilo.....	5.00	96 ¹ / ₂
	All other alkaloids and their salts.....	do	5.00	96 ¹ / ₂
	Oxide of iron, lead, tin, and zinc.....	100 kilos ..	2.00	38 ³ / ₈
	Acetate of alumina, iron, lead, and copper.....	do	1.00	19 ³ / ₁₀
	Carbonate of baryta.....	do	2.00	38 ³ / ₈
	Carbonate of magnesia.....	do	25.00	4 83
	Carbonate of lead.....	do	5.00	96 ¹ / ₂
	Carbonate of soda and potash.....	do	.50	9 ⁶⁵ / ₁₀₀
	Magnesia, calcined or caustic.....	do	20.00	3 86
	Chloride of lime, potash, and soda, including hypochlorides..	do	1.00	19 ³ / ₁₀
	Chloride of potassium.....		Free.....	
	Chloride of magnesia].....	100 kilos ..	1.00	19 ³ / ₁₀
	Nitrate of silver.....	Kilo.....	5.00	96 ¹ / ₂
	Nitrate of soda, refined, and of potash.....	100 kilos ..	3.00	57 ⁹ / ₁₀
	Nitrate of crude soda.....		Free.....	
	Borax and borate of soda.....	100 kilos ..	.50	9 ⁶⁵ / ₁₀₀

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
15	Chemicals—Continued.			
	Salt (prohibited). (Every mixture containing soluble salt in which chlorine is present in the proportion of 15.2 per cent., and sodium in the proportion of 9.8 per cent., is classed as salt, and prohibited.)		<i>Francs.</i>	
	Sulphate of alumina, potash, and alum	100 kilos ..	.50	\$0 09 ⁶⁵ / ₁₀₀
	Sulphate of baryta	do	1.00	19 ³⁵ / ₁₀₀
	Sulphate of iron and manganese	do	2.00	38 ³⁵ / ₁₀₀
	Sulphate of copper and zinc, and bisulphate of iron and copper	do	2.00	38 ³⁵ / ₁₀₀
	Sulphate of magnesia	do	1.50	28 ⁸⁵ / ₁₀₀
	Sulphate of soda and potash	do	.50	9 ⁶⁵ / ₁₀₀
	Bitartrate of potash		Free	
	Sulphuret of mercury, cinnabar, or vermilion	100 kilos ..	100.00	19 30
	Matches, of wood	do	11.00	2 12
	Matches, of stearine, wax, and the like	do	11.00	2 12
	Liquorice root		Free	
	Herbs, flowers, leaves, lichens, and roots, not classed as medicinal	100 kilos ..	2.00	38 ³⁵ / ₁₀₀
	Cassia and tamarind	do	7.00	1 35 ¹⁵ / ₁₀₀
	Manna	do	10.00	1 93
	Camphor, crude	do	2.00	38 ³⁵ / ₁₀₀
	Camphor, refined	do	15.00	2 89 ¹⁵ / ₁₀₀
	Orange and lemon peel, fresh and dried		Free	
	Sealing wax	100 kilos ..	30.00	5 79
	Perfumery, containing alcohol	do	37.50	7 23 ¹⁵ / ₁₀₀
	Perfumery, non-alcoholic	do	12.00	2 31 ³⁵ / ₁₀₀
	Soap. (See Soap.)			
	Gunpowder and other explosives	do	150.00	28 96
	Cartridges, empty, without percussion caps	do	60.00	11 58
	Cartridges, empty, with percussion caps	do	60.00	11 58
	Cartridges, charged	do	150.00	28 96
	Cartridges, percussion caps	do	150.00	28 96
	Juice of orange, lemon, and citron		Free	
	Juice of aloes, and other medicinal vegetables not specially named	100 kilos ..	10.00	1 93
	Gums and resins		Free	
	Medicines not specially named, including effervescing citrate of magnesia	100 kilos ..	120.00	23 16
	Eau de Javelle (classed as chloride of lime)	do	1.00	19 ³⁵ / ₁₀₀
	Mineral waters, natural and artificial	do	.50	9 ⁶⁵ / ₁₀₀
16	Clocks and watches:			
	Clocks, church and public building	do	20.00	3 86
	Clocks, house	Each	5.00	96 ¹⁵ / ₁₀₀
	Watches, gold	do	3.00	57 ¹⁵ / ₁₀₀
	Watches, other metals	do	1.00	19 ³⁵ / ₁₀₀
	Chronometers	100 kilos ..	30.00	5 79
	Sun, sand, and water clocks	do	60.00	11 58
	Clock movements, church and public building	do	20.00	3 86
	Clock movements, house	do	50.00	9 66
	Watch movements	do	.25	4 ¹⁵ / ₁₀₀
17	Coal		Free	
18	Copper, classed with and including brass and bronze:			
	Ore		do	
	Rough copper	100 kilos ..	4.00	77 ¹⁵ / ₁₀₀
	Bars, sheets, and tubes	do	10.00	1 93
	Wire, less than 5 millimeters in thickness	do	15.00	2 89 ¹⁵ / ₁₀₀
	Hammered, in coarse work	do	15.00	2 89 ¹⁵ / ₁₀₀
	Otherwise worked	do	25.00	4 83
	Wire or bars, gilded or silvered	do	100.00	19 30
	Wire, gilded or silvered, and woven into textile fabrics	do	100.00	19 30
	Other manufactures, gilded or silvered	do	120.00	23 16
	On cylinders and blocks engraved for the press		Free	
	Nails	100 kilos ..	10.00	1 93
	Bolts	do	15.00	2 89 ¹⁵ / ₁₀₀
	Tacks, including iron tacks with copper or brass heads	do	60.00	11 58
	Threads, for the use of tailors, dressmakers, &c	do	60.00	11 58
19	Cotton:			
	Bales, or in mass		Free	
	Wadding	100 kilos ..	6.00	1 15 ¹⁵ / ₁₀₀
	Thread—			
	Untwisted and unbleached, measuring not over 10,000 meters (=1,936 ¹⁵ / ₁₀₀ yards) for every half kilogram (=1.102 pounds)	do	18.00	3 47
	Measuring from 10,000 meters (=1,936 ¹⁵ / ₁₀₀ yards) to 20,000 meters (=3,872 ¹⁵ / ₁₀₀ yards) for every half kilogram (=1.102 pounds)	do	22.00	4 24

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
19	Cotton—Continued. Thread—Continued. Untwisted and unbleached, &c.—Continued.		<i>Francs.</i>	
	Measuring from 20,000 to 30,000 meters (=5,808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	100 kilos ..	26. 00	\$5 02
	Measuring from 30,000 to 40,000 meters (=7,744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	32. 00	6 17
	Measuring from 40,000 to 50,000 meters (=9,680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	39. 00	7 53
	Measuring from 50,000 to 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	48. 00	9 26
	Measuring more than 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	60. 00	11 58
	Untwisted and bleached, measuring not more than 10,000 meters (=1,936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	21. 60	4 16 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3,872 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	26. 40	5 09 $\frac{1}{2}$
	Measuring from 20,000 to 30,000 meters (=5,808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	31. 20	6 02 $\frac{1}{10}$
	Measuring from 30,000 to 40,000 meters (=7,744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	38. 40	7 41 $\frac{1}{10}$
	Measuring from 40,000 to 50,000 meters (=9,680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	46. 80	9 05 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	57. 60	11 11 $\frac{1}{2}$
	Measuring more than 60,000 meters (=13,416 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	72. 00	13 88
	Untwisted and dyed, measuring not more than 10,000 meters (=1,936 $\frac{1}{2}$ yards) per every half kilogram (=1.102 pounds).	do	43. 00	8 29
	Measuring from 10,000 to 20,000 meters (=3,872 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	47. 00	9 07
	Measuring from 20,000 to 30,000 meters (=5,808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	51. 00	9 85
	Measuring from 30,000 to 40,000 meters (=7,744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	57. 00	10 99
	Measuring from 40,000 to 50,000 meters (=9,680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	64. 00	12 34
	Measuring from 50,000 to 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	73. 00	14 07
	Measuring more than 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	85. 00	16 40
	Twisted and unbleached, measuring not more than 10,000 meters (=1,936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	23. 40	4 41 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3,872 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	28. 60	5 41 $\frac{2}{10}$
	Measuring from 20,000 to 30,000 meters (=5,808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	33. 80	6 52 $\frac{3}{10}$
	Measuring from 30,000 to 40,000 meters (=7,744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	41. 60	8 02 $\frac{1}{2}$
	Measuring from 40,000 to 50,000 meters (=9,680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	50. 70	9 78 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102).	do	62. 40	12 04 $\frac{3}{10}$
	Measuring more than 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	78. 00	15 06
	Twisted and bleached, measuring not more than 10,000 meters (=1,936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	28. 08	5 41 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3,872 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	34. 32	6 62 $\frac{3}{10}$
	Measuring from 20,000 to 30,000 meters (=5,808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	40. 56	7 82 $\frac{1}{2}$
	Measuring from 30,000 to 40,000 meters (=7,744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	49. 92	9 63 $\frac{3}{2}$
	Measuring from 40,000 to 50,000 meters (=9,680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	60. 84	11 74 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	74. 88	14 45 $\frac{3}{10}$
	Measuring more than 60,000 meters (=11,616 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	93. 60	18 06 $\frac{1}{2}$
	Twisted and dyed, not measuring more than 10,000 meters (=1,936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	55. 90	10 78 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3,872 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	61. 10	11 79 $\frac{1}{2}$

Customs duties collected under the present tariff laws of Italy--Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
19	Cotton--Continued.			
	Thread--Continued,			
	Twisted and dyed, measuring from 20,000 to 30,000 meters (=5.808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	100 kilos ..	Francs. 66.30	\$12 79 $\frac{1}{2}$
	Measuring from 30,000 to 40,000 meters (=7.744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	74.10	14 30 $\frac{1}{2}$
	Measuring from 40,000 to 50,000 meters (=9.680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	83.20	16 05 $\frac{7}{8}$
	Measuring from 50,000 to 60,000 meters (=13.416 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	94.90	18 31 $\frac{1}{2}$
	Measuring more than 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	110.50	21 32 $\frac{1}{2}$
	(In twisted thread the classification is made by multiplying the whole length by the number of threads.)			
	Warps--			
	Single and unbleached, not measuring more than 10,000 meters (=1.936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	20.70	3 99 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3.872 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	25.30	4 88 $\frac{1}{2}$
	Measuring from 20,000 to 30,000 meters (=5.808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	29.90	5 23
	Measuring from 30,000 to 40,000 meters (=7.744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	36.80	7 20 $\frac{1}{2}$
	Measuring from 40,000 to 50,000 meters (=9.680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	44.85	8 65 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	55.20	10 07 $\frac{1}{2}$
	Measuring more than 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	69.00	13 32
	Single and bleached, measuring not more than 10,000 meters (=1.936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	24.84	4 79 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3.872 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	30.36	5 85
	Measuring from 20,000 to 30,000 meters (=5.808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	35.88	6 92 $\frac{1}{2}$
	Measuring from 30,000 to 40,000 meters (=7.744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	44.16	8 52 $\frac{1}{2}$
	Measuring from 40,000 to 50,000 meters (=9.680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	53.82	10 38 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	66.24	12 60 $\frac{1}{2}$
	Measuring more than 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	82.80	15 98
	Single and dyed, measuring not more than 10,000 meters (=1.936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	49.45	9 50 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3.872 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	54.05	10 43 $\frac{1}{2}$
	Measuring from 20,000 to 30,000 meters (=5.808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	58.65	11 30
	Measuring from 30,000 to 40,000 meters (=7.744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	65.55	12 65 $\frac{1}{2}$
	Measuring from 40,000 to 50,000 meters (=9.680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	73.60	13 20 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	83.95	16 20 $\frac{1}{2}$
	Measuring more than 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	97.75	18 86 $\frac{1}{2}$
	Twisted and unbleached, not measuring over 10,000 meters (=1.936 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	26.91	5 19 $\frac{1}{2}$
	Measuring from 10,000 to 20,000 meters (=3.872 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	32.89	6 34 $\frac{7}{8}$
	Measuring from 20,000 to 30,000 meters (=5.808 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	38.87	7 50 $\frac{1}{2}$
	Measuring from 30,000 to 40,000 meters (=7.744 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	47.84	9 23 $\frac{1}{2}$
	Measuring from 40,000 to 50,000 meters (=9.680 $\frac{1}{2}$ yards) for every half kilogram (=1.102 pounds).	do	58.30	11 25 $\frac{1}{2}$
	Measuring from 50,000 to 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	71.76	13 84 $\frac{1}{2}$
	Measuring more than 60,000 meters (=11.616 $\frac{2}{3}$ yards) for every half kilogram (=1.102 pounds).	do	89.70	17 31 $\frac{1}{2}$

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
19	Cotton—Continued.			
	Warps—Continued.			
	Twisted and bleached, measuring not more than 10,000 meters (=1.936½ yards) for every half kilogram (=1.102 pounds).	100 kilos ..	<i>Franks.</i> 32.29	\$6 23½
	Measuring from 10,000 to 20,000 meters (=3.872½ yards) for every half kilogram (=1.102 pounds).	do	39.47	7 61½
	Measuring from 20,000 to 30,000 meters (=5.808½ yards) for every half kilogram (=1.102 pounds).	do	46.24	8 92½
	Measuring from 30,000 to 40,000 meters (=7.744½ yards) for every half kilogram (=1.102 pounds).	do	57.41	11 08
	Measuring from 40,000 to 50,000 meters (=9.680½ yards) for every half kilogram (=1.102 pounds).	do	69.97	13 50
	Measuring from 50,000 to 60,000 meters (=11.616½ yards) for every half kilogram (=1.102 pounds).	do	86.11	16 61½
	Measuring more than 60,000 meters (=11.616½ yards) for every half kilogram (=1.102 pounds).	do	107.64	20 77½
	Twisted and dyed, measuring more than 10,000 meters (=1.936½ yards) for every half kilogram (=1.102 pounds).	do	64.28	12 40½
	Measuring from 10,000 to 20,000 meters (=3.872½ yards) for every half kilogram (=1.102 pounds).	do	70.26	13 56
	Measuring from 20,000 to 30,000 meters (=5.808½ yards) for every half kilogram (=1.102 pounds).	do	76.24	14 71½
	Measuring from 30,000 to 40,000 meters (=7.744½ yards) for every half kilogram (=1.102 pounds).	do	85.21	16 45½
	Measuring from 40,000 to 50,000 meters (=9.680½ yards) for every half kilogram (=1.102 pounds).	do	95.68	18 46½
	Measuring from 50,000 to 60,000 meters (=11.616½ yards) for every half kilogram (=1.102 pounds).	do	109.13	21 06
	Measuring more than 60,000 meters (=11.616½ yards) for every half kilogram (=1.102 pounds).	do	127.07	24 52½
	Tissues—			
	Unbleached, weighing 13 kilograms (=28.652 pounds) or more to every 100 square meters (=119.59 square yards) and having in a square of 5 millimeters of warp and woof—			
	27 or less elementary threads	do	57.00	10 99
	More than 27 elementary threads	do	64.00	12 34
	Unbleached, weighing 7 kilograms (=15.428 pounds) or more, and less than 13 kilograms (=28.652 pounds) to every 100 square meters (=119.59 square yards) and having in a square of 5 millimeters of warp and woof—			
	27 or less elementary threads	do	66.00	12 74
	More than 27 elementary threads	do	75.00	14 47
	Unbleached, weighing less than 7 kilograms (=15.428 pounds)—			
	27 or less elementary threads	do	80.00	15 44
	More than 27 elementary threads	do	100.00	19 30
	Bleached, weighing 13 kilograms (=28.652 pounds) or more, to every 100 square meters (=119.59 square yards) and having in a square of 5 millimeters of warp and woof—			
	27 or less elementary threads	do	68.40	13 20½
	More than 27 elementary threads	do	76.80	15 02½
	Bleached, weighing 7 kilograms (=15.428 pounds) or more, but less than 13 kilograms (=28.652 pounds)—			
	27 or less elementary threads	do	79.20	15 28½
	More than 27 elementary threads	do	90.00	17 37
	Bleached, weighing less than 7 kilograms (=15.428 pounds).			
	27 or less elementary threads	do	96.00	18 53
	More than 27 elementary threads	do	120.00	23 16
	(Unbleached tissues having a mixture of bleached are classed and taxed as bleached.)			
	Colored, weighing 13 kilograms (=28.652 pounds) or more to every 100 square meters (=119.59 square yards) and having in a square of 5 millimeters of warp and woof—			
	27 or less elementary threads	do	92.00	17 76
	More than 27 elementary threads	do	99.00	19 11
	Colored, weighing 7 kilograms (=15.428 pounds) or more, and less than 13 kilograms (=28.652 pounds) to every 100 square meters, and having in a square of 5 millimeters of warp and woof—			
	27 or less elementary threads	do	101.00	20 49½
	More than 27 elementary threads	do	110.00	21 23

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
19	Cotton—Continued.			
	Tissues—Continued.			
	Colored, weighing less than 7 kilograms (=15.428 pounds)—		<i>Francs.</i>	
	27 or less elementary threads.....	100 kilos ..	115.00	\$22 19½
	More than 27 elementary threads.....	do	135.00	26 06
	Printed, weighing 13 kilograms or more (=28.752 pounds) to every 100 square meters (=119.59 square yards), and having in a square of 5 millimeters of warp and woof—			
	27 or less elementary threads.....	do	138.40	26 71½
	More than 27 elementary threads.....	do	146.80	28 33½
	Printed, weighing 7 kilograms (=15.428 pounds) or more, and less than 13 kilograms (=28.652 pounds)—			
	27 or less elementary threads.....	do	149.20	28 79½
	More than 27 elementary threads.....	do	160.00	30 88
	Printed, weighing less than 7 kilograms (=15.428 pounds)—			
	27 or less elementary threads.....	do	166.00	32 04
	More than 27 elementary threads.....	do	190.00	36 67
	Embroidered in chain stitch	do	300.00	57 90
	Embroidered in double stitch (punta passato).....	do	400.00	77 20
	Oiled—			
	For floors and tarred tissues	do	25.00	4 83
	All others	do	50.00	9 66
	Tulle—			
	Gauze and muslin—			
	Unbleached	do	250.00	48 26
	Bleached or dyed	do	300.00	57 90
	Embroidered	do	500.00	96 50
	Buttons, knitted goods, brushes and coverlids.....	do	100.00	19 30
	Galloons and ribbons.....	do	90.00	17 37
	Laces	do	300.00	57 90
	Velvets—			
	Unbleached	do	120.00	23 16
	Bleached	do	140.00	27 02
	Dyed	do	155.00	29 91
	Articles sewed. In addition to the tax on textile fabrics of the highest class into which they can be admitted, sewed articles are taxed 10 per cent.			
	Gun cotton, classed with gunpowder.			
	Cotton oil, classed with oils.			
20	Earthen, stone, and china ware:			
	Manufactures of common clay—			
	Tiles for floors, glazed or polished.....	do	1.10	22½
	Crucibles, jars, stone and other pottery unglazed or covered with one metallic coat of brown, yellow, green, or red.	do	1.50	28½
	Majolica work—			
	Common or of colored paste, with opaque varnish.....	do	8.00	1 54½
	Fine, or of white paste	do	12.00	2 31½
	Gilded or decorated.....	do	32.00	6 17
	Porcelaine work—			
	White	do	12.00	3 31½
	Gilded or decorated.....	do	32.00	6 17
	Marble or alabaster vases	do	.75	14½
	(Tiles for flooring, unglazed, are classed and taxed as bricks.)			
21	Fertilizers		Free	
22	Fish:			
	Fresh		Free	
	Dried or smoked.....	100 kilos ..	5.00	96½
	Preserved in salt	do	6.00	1 15½
	Preserved in oil.....	do	10.00	1 93
	Preserved in boxes	do	10.00	1 93
	(Sardines, anchovies and the like, preserved in salt, are admitted free when imported from the most favored nations.)			
23	Flax, hemp, and jute:			
	Raw		Free	
	Carded.....		Free	
	Cordage and cables	100 kilos ..	3.00	57½
	Nets	do	4.00	77½
	Threads—			
	Untwisted, of raw hemp or flax, washed or bleached.....	do	11.50	2 21½
	Jute, raw	do	10.00	1 93
	Jute, washed or bleached	do	11.50	2 21½
	Untwisted and dyed	do	17.10	3 30
	Untwisted and raw, washed or whitened.....	do	23.10	4 45½
	Twisted and dyed	do	34.65	6 66½

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Dnty.	
23	Flax, hemp, and jute—Continued.			
	Tissues—			
	Raw jute	100 kilos ..	<i>Francs.</i> 20. 00	\$3 86
	(The smallest tax which can be paid on jute is 20 lire = \$3.86.)			
	Jute of any other sort classed as tissues of flax and hemp and taxed according to quality.			
	Flax and hemp united, not having more than 5 threads on the warp in a space of 5 millimeters—			
	Raw or bleached, excluding packing cloth	do	23. 10	4 45½
	Packing cloth, belts, and tubes	do	12. 00	2 31½
	Dyed or made with dyed threads	do	38. 00	7 33
	(Tissues, raw or bleached, with a few narrow colored lines, intended for hospitals and other charitable purposes, for military uses, or for packing purposes, are classed and taxed as tissues raw or bleached.)			
	Flax and hemp united, having more than 5 threads in warp in the space of 5 millimeters—			
	Raw, bleached, or mixed with white	do	57. 75	11 14½
	Dyed or made with dyed thread	do	90. 00	17 37
	Flax or hemp, printed	do	115. 00	22 19½
	(For the worked or damasked tissues, the duty is paid according as they are raw, bleached, dyed, or printed, and according to the number of threads. Where the threads cannot be counted the articles are classed and taxed as knitted goods.)			
	Flax or hemp, embroidered	do	250. 00	48 26
	Flax or hemp oil-cloths—			
	For floors	do	20. 00	3 86
	All others	do	40. 00	7 72
	Trimming of flax or hemp and knitted goods	do	110. 00	21 23
	Buttons and ribbons of flax or hemp	do	100. 00	19 30
	Laces and tulles	Kilo	30. 00	5 79
	Sewed articles, classed and taxed with the tissues of which they are composed, together with 10 per cent. additional.			
	Flax, hemp, and jute seed, classed and taxed with seeds.			
	Flaxseed oil, classed and taxed with oils.			
	Hempseed oil, classed and taxed with oils.			
24	Fruits:			
	Oranges and lemons	100 kilos ..	2. 00	38½
	Citrons and limes		Free	
	Dates		Free	
	Dried figs	100 kilos ..	10. 00	1 93
	Dried grapes	do	10. 00	1 93
	Almonds, shelled		Free	
	Almonds, unshelled		Free	
	Small nuts		Free	
	Oily nuts, not otherwise named		Free	
	All other dried fruits	100 kilos ..	2. 00	38½
	Fresh fruits, including grapes		Free	
	Fruits preserved in vinegar, salt, or oil	100 kilos ..	8. 00	1 54½
	Fruits preserved in alcohol	do	40. 00	7 72
	Pistachio nuts	do	8. 00	1 54½
	Mushrooms and truffles	do	10. 00	1 93
25	Furs:			
	Skins—			
	Raw, fresh, or dried, with hair, and suitable for use by furriers.		Free	
	Fine, tanned, with the hair	100 kilos ..	60. 00	11 58
	Common, tanned with the hair	do	30. 00	5 79
	Muffs of fur—			
	Fine	100	600. 00	115 80
	Common	do	300. 00	57 90
	Furrier articles not elsewhere named—			
	Fine fur	100 kilos ..	600. 00	115 80
	Common fur	do	300. 00	57 90
26	Glass:			
	Plates of glass, unpolished, except common window glass—			
	Less than 4 millimeters of thickness	do	3. 75	69½
	4 millimeters or more of thickness	do	8. 00	1 54½
	Common window glass, unpolished	do	8. 00	1 54½
	Mirrors	do	35. 00	6 76
	Glass manufactures—			
	Blown or molded, and neither colored, ground, nor engraved.	do	7. 00	1 35½

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
26	Glass—Continued. Glass manufactures—Continued. Colored or ground, painted, enameled, gilded, or sil- vered. Vases and tubes with marks to indicate divisions and degrees cut in the glass are classed and taxed as as "instruments," optical or otherwise. Common bottles Demijohns Broken glass Crystals or enameled, of all sorts, cut as gems or for chandeliers and the like. Vitrifications: Glass buttons (classed as merchandise)	100 kilos.. 100..... 100 kilos.. 100 kilos.. .....do	<i>Francs.</i> 11. 00 3. 00 3. 00 Free 30. 00 60. 00 20. 00 53. 00	\$2 12 57 ² / ₁₀ 57 ² / ₁₀ 5 79 11 58 3 86 10 23
27	Glucose: Liquid..... Solid.....	do	do	do
28	Glue: Fish glue..... Marine glue..... Other glue.....	do	10. 00 1. 00 4. 00	1 93 19 ³ / ₁₀ 77 ¹ / ₂
29	Gunpowder, classed and taxed as chemical products. (See Chem- icals.)			
30	Hair: Raw or dyed..... Twisted cords and rough articles of hair Hair mattresses Hair cloth— For sieves All other Human hair— Worked Not worked	do	Free 8. 00 15. 00 30. 00 165. 00 3. 00 10. 00	 1 54 ³ / ₄ 2 89 ¹ / ₂ 5 79 31 75 57 ² / ₁₀ 1 93
31	Hay		Free	.....
32	Hides and skins: Hides— Green or dry, not suitable for furriery Green or dry, suitable for furriery..... Tanned, with hair— Fine Common Fine hides tanned with hair include the following: Chin- chilla, ermine, polecat, lynx, otter, Canada marmot, marten, suasso, muskrat, gray miniver, fox (except the common fox), sable. Common hides tanned with hair include all not mentioned in the foregoing list.	do	Free Free 60. 00 30 00	 11 58 5 79
33	Honey	do	5. 00	96 ¹ / ₂
34	Sweetmeats made of honey.....	do	70. 00	13 51
34	Hops: Flowers Vines for transplanting Dry roots..... Extract of	do	Free Free 2. 00 10. 00	 38 ¹ / ₂ 1 93
35	Ice			
36	India-rubber manufactures: Crude rubber..... Worked in braid, ribbons, and elastic tissues Other manufactures, including clothing and shoes (The minister of finance has the right to permit Italian manufacturers of rubber to introduce, free of duty, and up to the value of 20,000 lire (= \$19,300), those special textures which are used exclusively in their manufactures.) Rubber dissolved in flaxseed oil is classed and taxed as var- nish.	do	Free 115. 50 32. 00	 22 29 ¹ / ₂ 6 17
37	Iron and steel: Iron ore..... Scrap-iron and steel..... Cast iron— Pig Worked in rough castings Worked in smooth castings, turned, enameled, tinned, or ornamented with other metals. Iron in masses not yet freed of dross, and also steel in ingots. Iron and steel not tempered (meaning iron and steel simply rolled or hammered)— (a) Bars of all sizes and rods of not more than 5 milli- meters in diameter.	do	Free Free Free 4. 00 5. 00 2. 00 4. 62	 77 ¹ / ₂ 96 ¹ / ₂ 38 ¹ / ₂ 89 ¹ / ₂

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
37	Iron and steel—Continued.			
	Iron and steel not tempered (meaning iron and steel simply rolled or hammered)—Continued.		<i>Francs.</i>	
	(b) Rods and wire of 5 millimeters and less in diameter.	100 kilos ..	8.00	\$1 54½
	(c) Plates of 4 millimeters and over in thickness	do	4.62	.....
	(d) Plates of less than 4 millimeters in thickness and also pipes.	do	8.00	1 54½
	(In divisions c and d are included plates of over 20 centimeters in width, and also those of less width, provided they are 3 meters in length. Plates not of either of those dimensions are classed and taxed in divisions a or b according to thickness.)			
	Iron and steel forged into anchors, axles, anvils, and other coarse work, including cannon.	do	7.00	1 35½
	Iron or steel rails	do	3.00	57½
	(Those only are admitted which are of the pattern adopted by the Italian railways.)			
	Iron of second fabrication (meaning iron subjected to other manufacturing operations than those of simple rolling or hammering)—			
	Plain	do	11.80	2 27½
	Ornamented with other metals	do	14.00	2 70
	Tinned iron, or sheets of iron covered with tin, zinc, or lead—			
	Not worked	do	10.75	2 07½
	Worked and also ornamented with other metals	do	16.00	3 08½
	Steel—			
	Tempered in bars, rods, plates, and wire	do	10.00	1 93
	Springs	do	15.00	2 89½
	Otherwise wrought	do	25.00	4 83
	Knives for the arts and trades, and knives with plain wooden handles.	do	16.00	3 08½
	Tools and instruments for the arts and trades, and for agriculture, of iron or steel, or both—			
	Scythes and sickles	do	10.00	1 93
	All others	do	12.00	2 31½
	Iron manufactures—			
	Polished, whether ornamented or not with other common metals.	do	60.00	11 58
	Gilded, silvered, or covered in part or in whole with silver.	do	100.00	19 30
	Galvanized, enameled, coppered, tinned, smoothed, or varnished, but not polished, classed and taxed with iron of second fabrication.			
	Cannon—			
	Iron or steel	do	7.00	1 35½
	Cast iron—			
	Rough cast	do	4.00	77½
	Finished	do	5.00	96½
	Guns	100	600.00	115 80
	Parts of guns	100 kilos ..	200.00	38 60
	Pistols	100	350.00	67 56
	Parts of pistols	100 kilos ..	700.00	135 10
	Swords and sabers (mounted)	100	200.00	38 60
	Steam engines, with or without boilers and hydraulic motors.	100 kilos ..	6.00	1 15½
	Locomotives, with or without boilers; also marine engines, with or without boilers.	do	8.00	1 54½
	Boilers	do	8.00	1 54½
38	Jewelry:			
	Rubies, emeralds, diamonds, &c	Hecto	14.00	2 70
	Agates, opals, onyx, &c	Kilo	9.00	1 73½
	Imitation stones	100 kilos ..	30.00	5 79
	Gold jewelry	Hecto	7.00	1 35½
	Silver and gilt and platina jewelry	Kilo	10.00	1 93
	Jewelry of all other metals	100 kilos ..	100.00	19 30
39	Lamps:			
	For electric lights	do	30.00	5 79
	Plain glass or crystal	do	7.00	1 35½
	Colored glass or crystal	do	11.00	2 12
	Gold	Hecto	14.00	2 70
	Silver or gilt	Kilo	5.00	96½
	(All other materials classed and taxed according to the metal of which they are chiefly made, or as merchandise, fine or common. Fine merchandise pays 100 lire (\$19.30), and common merchandise pays 60 lire (\$11.58) per quintal of 220.464 pounds.)			

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
39	Lamps—Continued. Caral lamps, or oil lamps with regulators or other mechanism—		Francs.	
	Fine	100 kilos..	100.00	\$19 30
	Common	do	60.00	11 58
40	Lead:		Free	
	Ore, whether argentiferous or not			
	Lead and its alloys with antimony—			
	Pigs	100 kilos..	.50	09 ⁶⁵ / ₁₀₀
	Rolled, in sheets or pipes	do	3.00	57 ⁹ / ₁₀
	Type	do	5.00	96 ¹ / ₂
	Other manufactures, including shot and bullets	do	5.00	96 ¹ / ₂
	White lead	do	5.00	96 ¹ / ₂
	Chromate of lead	do	12.00	2 31 ³ / ₄
	Sulphate of lead (galena)		Free	
	Oxide of lead	100 kilos..	2.00	38 ³ / ₄
	Nitrate of lead	do	4.00	77 ¹ / ₂
	Red lead of Siberia	do	12.00	2 31 ³ / ₄
	(For other compounds of lead, see Chemical substances.)			
41	Leather:			
	Hides, tanned, unhaired, and not finished	do	25.00	4 83
	Morocco leather	do	75.00	14 47
	Patent leather	do	75.00	14 47
	Hides, tanned, without hair and finished for sole leather	do	45.00	8 67
	Hides, tanned, without hair and finished for other purposes	do	50.00	9 66
	Kid, goat, or lamb skins, tanned	do	20.00	3 86
	(Leather cut in boot legs, uppers, soles, girdles, hat trimmings, &c., classed and taxed as the respective leather of which they are composed.)			
	Leather scraps		Free	
	Harness, plain	100 kilos..	60.00	11 58
	Harness, ornamented	do	90.00	17 37
	Saddles	100	900.00	173 70
	Saddles, not elsewhere mentioned	100 kilos..	60.00	11 58
	Leather gloves of all kinds (also cut, but not sewed)	100 pairs..	7.50	1 44 ¹ / ₂
	Boots, half-boots, and gaiters	do	110.00	21 23
	All other foot covering	do	70.00	13 51
	Leather trunks and valises	Each	2.00	38 ³ / ₄
	Belting and bands, finished and sewed for machinery	100 kilos..	75.00	14 47
	Other leather goods not elsewhere named	do	50.00	9 66
42	Lime and cement:			
	Lime and plaster of paris		Free	
	Cements	100 kilos..	.50	09 ⁶⁵ / ₁₀₀
	(For other compounds of lime, see Chemical substances and Fertilizers.)			
43	Malt liquors:			
	In wood	Hecto	2.00	38 ³ / ₄
	In bottles	100	2.00	38 ³ / ₄
44	Medical instruments	100 kilos..	30.00	5 79
45	Naval stores:			
	Rosin, indigenous, raw	do	1.00	19 ³ / ₄
	All other		Free	
	Tar	100 kilos..	1.00	19 ³ / ₄
	Turpentine, indigenous, raw	do	1.00	19 ³ / ₄
	Other turpentine		Free	
	Oil of turpentine		Free	
	Spirits of turpentine		Free	
46	Oil cake and meal			
47	Oils:			
	Animal oils—			
	Whale oil	100 kilos..	6.00	1 15 ¹ / ₂
	Other fish oil, unrefined	do	6.00	1 15 ¹ / ₂
	Fish oil, refined	do	10.00	1 93
	Fish oil, prepared or compounded	do	120.00	23 16
	Oil of beeswax	do	120.00	23 16
	Horn oil		Free	
	Oil of bone marrow		Free	
	Bear's oil		Free	
	Neats-foot oil		Free	
	Oil of tallow or suet		Free	
	Mineral oils—			
	Petroleum, crude	100 kilos..	27.00	5 21
	Petroleum, refined	do	33.00	6 37
	(If petroleum is offered at the custom-house in tin cases unboxed, or in demijohns, bottles, or the like, it is taxed 29 lire (\$5.59) if crude, and 36 lire (\$6.94) if refined.)			
	Crude, other than petroleum	do	27.00	5 21

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
47	Oils—Continued.			
	Mineral oils—Continued.		<i>Francs.</i>	
	Refined, other than petroleum	100 kilos	33.00	\$6 37
	Heavy oils, from the distillation of mineral oils, resins, and pitch.	do	6.00	1 15½
	Vegetable oils—			
	Olive oil	do	3.00	57½
	Other fixed vegetable oils	do	6.00	1 15½
	Volatile vegetable oils—			
	Oil of rose	Kilo	45.00	8 67
	All other	do	1.50	28½
	(The duty on volatile oils and essences is paid without any deduction for the weight of the vessels containing them.)			
	Palm oil	100 kilos	1.00	19½
	Cocanut oil	do	1.00	19½
	Oil of turpentine		Free	
	Oil for varnishes	100 kilos	12.00	2 31½
	Oil of sap	do	4.00	77½
	Oil of sweet almond	do	10.00	1 93
	Oil of cashew nut	do	10.00	1 93
	Castor oil	do	10.00	1 93
	Croton oil	do	10.00	1 93
	Oil of seeds	do	10.00	1 93
	Oil of mustard seed	do	10.00	1 93
	Oil of yellow amber	do	4.00	77½
	Oils compounded as perfumery with alcohol	do	37.50	7 23½
	Oils compounded as perfumery without alcohol	do	12.00	2 31½
48	Paraffine and wax:			
	Paraffine (classed as stearic acid)	do	8.00	1 54½
	Paraffine candles (classed as candles)	do	15.00	2 89½
	Wax—			
	Yellow, not manufactured	do	15.00	2 89½
	Yellow, manufactured	do	20.00	3 86
	White, not manufactured	do	30.00	5 79
	White, manufactured	do	40.00	7 72
	Residuum of	do	10.00	1 93
	Waxen anatomical preparations		Free	
	Shoemaker's wax		Free	
	Sealing wax	100 kilos	30.00	5 79
	Wax candles. (See Candles.)			
49	Paints:			
	Derived from bituminous substances—			
	Dry	do	15.00	2 89½
	In paste or liquid	do	10.00	1 93
	Coloring extracts from wood and all other dyestuffs	do	12.50	2 41½
	Colors in cakes, in powder, or of any other sort	do	12.00	2 31½
	Varnishes—			
	Containing alcohol	do	30.00	5 79
	All other sorts	do	12.00	2 31½
	(Colors contained in wooden paint boxes are classed as merchandise and taxed 60 lire (\$11.58) per quintal of 220.464 pounds.)			
	Woods, roots, leaves, flowers, herbs, &c., for dyeing—			
	Ground		Free	
	Not ground	100 kilos	2 00	38½
50	Paper:			
	White and colored, in pulp	do	10 00	1 93
	Colored, gilded, or figured, including wall paper	do	20 00	3 86
	Filtering or blotting		Free	
	Thick wrapping paper		Free	
	Thin wrapping paper	100 kilos	10.00	1 93
	Letter paper, with initials or designs of any kind	do	50.00	9 66
	Sand paper of all sorts, including emery and glass paper		Free	
	Insecticide paper	100 kilos	4.00	77½
	Chemical test paper	do	4.00	77½
	Paper in scraps or shreds		Free	
	Diaphanous paper made of gelatinous substances	100 kilos	60.00	11 58
	Paper in imitation of ivory	do	60.00	11 58
	Paper printed in designs for embroidery, &c	do	50.00	9 66
	Cigarette paper in small books	do	60.00	11 58
	Other cigarette paper	do	10.00	1 93
	Music paper	do	10.00	1 93
	Paper for medical purposes	do	120.00	23 16
	Playing cards	100 packs	20.00	3 86
	Playing cards, very small, and intended for children's toys—			
	Fine	do	100.00	19 30
	Common	do	60.00	11 58
	Visiting cards	do	60.00	11 58

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
50	Paper—Continued.		<i>Francs.</i>	
	Visiting cards with photographs	100 packs .	50.00	\$9 66
	Manuscripts		Free	
	Cornucopias, white, colored, gilded, &c., to hold confection- ery or medicines—			
	Fine	100 kilos..	100.00	19 30
	Common	do	60.00	11 58
	Impermeable paper		Free	
	Pasteboard—			
	Fine	220.464 lbs.	8.00	1 54½
	Common		Free	
	Imitating slate		Free	
	Imitating ivory	220.464 lbs.	60.00	11 58
	Impermeable	do	8.00	1 54½
	Tarred and mixed with pulverized mineral for roofing ..		Free	
	Boxes—			
	Fine	220.464 lbs.	100.00	19 30
	Common	do	60.00	11 58
	Diaphanous pasteboard made of gelatinous substances ..	do	60.00	11 58
	Pasteboard manufactures—			
	Fine	do	100.00	19 30
	Common	do	60.00	11 58
	Paper manufactures—			
	Fine	do	100.00	19 30
	Common	do	60.00	11 58
51	Plated ware:			
	Plated with silver	do	100 lire..	19 30
	Silver plated with gold	do	5.00	96½
52	Provisions:			
	Meats, fresh (including poultry)	do	5.00	96½
	Cooked	do	5.00	96½
	Meats, salted, smoked or otherwise prepared	do	20.00	3 86
	Game	do	15.00	2 89½
	Extract of meat	do	40.00	7 72
	Intestines—			
	Fresh		Free	
	Salted	220.464 lbs.	4.00	77½
	Oleomargarine—			
	Fresh	do	5.00	96½
	Salted	do	15.00	2 89½
	Lard	do	1.00	19 10
	Butter—			
	Fresh	do	5.00	96½
	Salted	do	15.00	2 89½
	Cheese	do	8.00	1 54½
53	Quicksilver	do	10.00	1 93
	Oxide of	do	4.00	77½
	Muriate and chloride of	do	4.00	77½
	Precipitate of	do	4.00	77½
	Calomel	do	120.00	23 16
	Cinnabar (mercurial ore)		Free	
	Vermilion	220.464 lbs.	25.00	4 83
54	Seeds:			
	Abro, balesur, and panacocco—			
	Pierced	do	60.00	11 58
	Unpierced		Free	
	(Cereals, classed, and taxed as their respective grains.)			
	For medicinal purposes	100 kilos..	10.00	1 93
	Vegetable	do	11.50	2 21 100
	Indian corn	do	11.50	2 21 100
	Millet	do	11.50	2 21 100
	Orobo	do	11.50	2 21 100
	Buckwheat	do	11.50	2 21 100
	All others		Free	
55	Soap:			
	Soft soap, dark	100 kilos..	6.00	1 15½
	All other soft soap, dark	do	12.00	2 31½
	Common soap	do	6.00	1 15½
	Transparent soap	do	12.00	2 31½
	Perfumed	do	12.00	2 31½
	Fine soap, unperfumed but like perfumed in form ..	do	12.00	2 31½
	Soap for dental purposes	do	12.00	2 31½
	Medicinal soap	do	120.00	23 16
56	Spirits:			
	Wine in wood, pure	Hecto.....	12.00	2 31½
	Wine in wood, sweetened or aromatized, including rum, brandy, &c.	do	25.00	4 83
	(The weight of the cask is not deducted in taxing spirits in wood.)			

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equivalent in United States money.
		Unit.	Duty.	
56	Spirits—Continued.		Francs.	
	Wine of all sorts in bottles holding more than a half but not over a liter.	100.....	25.00	\$4 83
	Wine of all sorts in bottles of half a liter or less	do	18.00	3 47
	Ether or chloroform	100 kilos..	4.00	77½
	(Every kilogram of ether or chloroform pays also a tax equivalent to that paid on two liters of spirits.)			
	Wine—			
	In wood	Hecto.....	4.00	77½
	In bottles	do	4.00	77½
	(Bottles containing a half liter or less are classed as containing half a liter; those containing more than a liter and less than two liters are classed as containing two liters.)			
	Vinegar—			
	In wood	do	10.00	1 93
	In bottles	100.....	25.00	4 83
57	Starch	100 kilos..	3.00	57½
	Pulverized, for toilet use	do	12.00	2 31½
58	Sugar:			
	First class	do	66.25	12 78½
	(All sugars belong to the first class that are purer than sample No. 20 Holland.)			
	Second class	do	53.00	10 23
	Sweetmeats and confectionery made with sugar	do	70.00	13 51
	Molasses, unrefined, intended for shoemakers' wax or like uses pay 1 lire per 100 kilograms (=220.464 pounds). The Government has the right to admit, free of duty, molasses intended for distillation.			
59	Tin:			
	Ore		Free .....	.....
	In pigs, rods, or scraps	100 kilos..	4.00	77½
	In sheets	do	15.00	2 89½
	All other	do	20.00	3 86
	(Tinned iron is classed and taxed as iron.)			
60	Tobacco:			
	In leaf or fiber (prohibited).			
	Havana cigars	Kilo	30.00	5 79
	(All cigars made of leaf from Cuba, Porto Rico of Varinas, Colombia, Java, Manila, or of like quality, are classed and taxed as Havana cigars.)			
	Manufactured tobacco of all other qualities including cigarettes.	do	20.00	3 86
61	Vegetables:			
	Fresh		Free .....	.....
	Dried	Ton.....	11.50	2 21½
	Ground, as substitutes for coffee	100 kilos..	5.00	96½
	Preserved in boxes and other receptacles	do	8.00	1 54½
62	Wood:			
	For fuel		Free .....	.....
	Charcoal of wood		Free .....	.....
	For cabinet-makers, unsawed	100 kilos..	2.00	38½
	For cabinet-makers, sawed	do	4.00	77½
	In boards or squares inlaid for floors	do	4.00	77½
	Common, rough, sawed, squared, or simply hewed or squared with the ax.		Free .....	.....
	In small boards for boxes sieves or the like; also in hoops of any length.		Free .....	.....
	Casks, new or old, with hoops of iron or wood	Hecto.....	0.20	3 16½
	Woods classed under "wood for cabinet-makers, sawed," and "wood for cabinet-makers unsawed," include the following woods: Holly, aloe, anchra or angelico, aquiles, orange, arariba rosa (<i>Ventrotabrum robustum</i>), rosewood, white or new holland, bigonia, box, cayenne, calamander, coral, cumaroo, ebony, iron wood, passion flower, guaranna (<i>Melanoxylon banna</i>) jacoranda (<i>Machæreum firmum</i>), jatoba (<i>Hymenea mirabilis</i>), lemon, marbleized, mahogany, walnut, odoriferous, olea vermehlo, palesiandro, palm, panacco, parbridge, santa lucia, sissoo, yew, tombac, violet (<i>Machærum violaceum</i>), guiana violet.			
	Woods used for medical purposes	100 kilos..	10.00	1 93
	Under this head are included the following woods: Cinnamon, nefritico, quassia, white sandal, saxafrax, serpentine, sclobalsamo.)			
	All other woods		Free .....	.....
	Wood pulp		Free .....	.....

Customs duties collected under the present tariff laws of Italy—Continued.

Number.	Tariff classification.	Tariff rates.		Equiva- lent in United States money.
		Unit.	Duty.	
62	Wood—Continued.		<i>Francs.</i>	
	Pertrified wood		Free	
	Woods for medicinal purposes	100 kilos..	10. 00	\$1 93
	Wood for hoops of whatever length		Free	
	Furniture—			
	Common curved wood, not upholstered	100 kilos	7. 50	1 44 $\frac{1}{2}$
	Common wood, not upholstered	do	13. 00	2 50 $\frac{1}{10}$
	Common wood, upholstered	do	40. 00	7 72
	Cabinet-makers' wood, veneered or inlaid; also, uphol- stered.	do	40. 00	7 72
	Oars, stakes, and poles		Free	
	Roots, for brushes		Free	
	Cork wood, unmanufactured		Free	
	Cork wood, manufactured	100 kilos..	15. 00	2 89 $\frac{1}{2}$
	Tools and various work of common wood, neither polished nor painted.		Free	
	All other	100 kilos..	8. 00	1 54 $\frac{7}{8}$
	Wooden merchandise, including togs	do	40. 00	7 72
	Ships, barks, and boats		Free	
	Canes, reeds, and rushes		Free	
	Basket work and mats—			
	Coarse		Free	
	Fine	100 kilos..	22. 00	4 24
	Braids of straw or other material of wood fiber		Free	
	Ropes of esparto, linden, and the like	100 kilos..	1. 50	28 $\frac{25}{100}$
	Straw hats, except ladies' trimmed hats	do	3. 00	57 $\frac{9}{10}$
63	Wool:			
	Natural, washed, carded dyed, waste wool, and refuse wool ..	do	Free	
	Woolen yarn—			
	Untwisted, bleached, or unbleached	100 kilos..	50. 00	9 66
	Untwisted and dyed	do	75. 00	14 47
	Twisted, bleached or unbleached	do	60. 00	11 58
	Twisted and dyed	do	90. 00	17 37
	Woolen textures—			
	(In textures composed in part of wool, the duty is levied on that material which dominates in weight. If, however, the threads of the warp are of cotton, the duty is smaller.)			
	Carded	do	140. 00	27 02
	Carded, with warp entirely of cotton yarn	do	93. 50	18 10 $\frac{1}{2}$
	Combed	do	170. 00	32 81
	Combed, with warp composed entirely of cotton yarn ..	do	130. 00	25 09
	Embroidered	do	400. 00	77 20
	Felt—			
	For hats	do	18. 00	3 47
	Tarred, pressed for soles, &c	do	7. 00	1 35 $\frac{1}{10}$
	For clothing	do	60. 00	11 58
	Woolen knitted goods and braids	do	200. 00	38 60
	Ribbons and galloons	do	220. 00	42 46
	Buttons	do	220. 00	42 46
	Laces and tulles	do	300. 00	57 90
	Covers made of waste strips of woolen cloth	do	60. 00	11 58
	Carpets made of waste strips of woolen cloth	do	60. 00	11 58
	Carpets	do	110. 00	21 23
	Sewed woolen goods of different materials are classed and taxed according to the predominating material.			
64	Zinc:			
	Ore		Free	
	In pigs or scraps	100 kilos..	1. 00	19 $\frac{3}{10}$
	Rolled or in sheets	do	4. 00	77 $\frac{1}{2}$
	In other work—ungilt	do	12. 00	2 31 $\frac{1}{2}$
	In other work—gilt	do	58. 00	11 18
	Nails	do	4. 00	77 $\frac{1}{2}$
	Tacks	do	60. 00	11 58
	Pipe	do	4. 00	77 $\frac{1}{2}$
	Oxide of zinc	do	2. 00	38 $\frac{1}{2}$

The full tariff of Italy was printed in consular Reports No. 26 $\frac{1}{2}$, p. 526.

NORWAY.

The full tariff of Norway is printed in consular Reports No. 26 $\frac{1}{2}$, p. 526.

PORTUGAL.

Customs duties collected under the present tariff laws of Portugal.

[Prepared by Minister E. P. C. Lewis.]

Number.	Tariff classification.	Unit.	Tariff rates of duty.	Equivalent in United States money.
1	Agricultural implements.....	Kilo.....	<i>Reis.</i> 2	\$0 00½
2	Animals:			
	Cattle.....	Each.....	340	36
	Hogs.....	do.....	110	11½
	Horses (p. b.).....	do.....	2,300	2 48
	Mules (p. b.).....	do.....	1,100	1 18
	Sheep and goats.....		Free.....	
	Donkeys.....	Each.....	570	61
	Leaches.....	1,000	100	10½
	Not specified.....		Free.....	
3	Art works:			
	Oil and water-color pictures, 5 per cent. ad valorem.			
	Plaster statues.....	Kilo.....	10	01½
	Marble statues, 1 per cent. ad valorem.			
	Articles for museums.....		Free.....	
4	Barks and extracts:			
	Cocoa shells.....	Kilo.....	20	02½
	Corkwood.....	do.....	4	00½
	Barks medicinal, 5 per cent. ad valorem.			
	Barks used in art and perfumery.....		Free.....	
	Barks used in dyeing.....		Free.....	
	Liquid extracts of barks.....		Free.....	
5	Blacking.....	Kilo.....	75	08
6	Bones, hoofs, horns, &c.:			
	Unmanufactured bones, hoofs, horns, &c.....		Free.....	
	Hoofs, manufactured.....	Kilo.....	1,500	1 62
	Buck and rhinoceros horns.....	do.....	75	08
	Bones, manufactured.....	do.....	3,000	3 24
	Elephants' and sea-horse teeth, unmanufactured.....	do.....	200	21½
	Elephants' and sea-horse teeth, worked.....	do.....	5,000	5 40
7	Books, maps, engravings, &c.:			
	Maps, engravings, lithographs, &c.....		Free.....	
	Books in foreign languages, unbound.....		Free.....	
	Books in foreign languages, bound or unbound.....		Free.....	
	Books by Portuguese authors resident abroad.....		Free.....	
	Books in Portuguese language printed abroad.....	Kilo.....	100	10½
	Books reprints abroad of Portuguese editions (can only be admitted in conformity with civil law).....	do.....	100	10½
8	Brass and manufactures of, and analogous alloys:			
	Brass in fragments.....		Free.....	
	Brass, cast.....	Kilo.....	2	00½
	Brass unfinished vessels.....	do.....	25	02½
	Brass not specified.....	do.....	2½	00½
	Brass wire and sieves.....	do.....	50	5½
9	Breadstuffs:			
	Barley.....	do.....	8	00½
	Indian corn.....	do.....	9	01
	Oats.....	do.....	8	00½
	Rye.....	do.....	9	01
	Wheat.....	do.....	10	01½
	Wheat flour.....	do.....	16	01½
	Biscuits.....	do.....	75	08
11	Brooms and brushes:			
	Brushes for personal use.....	do.....	500	54
	Brushes for other purposes.....	do.....	20	02½
	Brooms.....	do.....	20	02½
12	Candles:			
	Wax.....	do.....	50	05½
	Spermaceti.....	do.....	50	05½
	Tallow.....	do.....	30	03½
	Paraffine.....	do.....	70	07½
13	Carriages of all descriptions, 25 per cent. ad valorem.			
14	Cars, for whatever system, 5 per cent. ad valorem.			

Customs duties collected under the present tariff laws of Portugal—Continued.

Number.	Tariff classification.	Unit.	Tariff rates of duty.	Equivalent in United States money.
15	Chemicals:		<i>Reis.</i>	
	Bromine, iodine, phosphorus, arsenical acid, pyroligneous (marking in the areometer 6 degrees) caustic alkali, solid or dissolved azotic soda, carbonate of soda, natural soda, soda borate, chlorate of lime.		Free	
	Sulphuric and chloric acid	Kilo	1	\$0 00 ¹ / ₁₀
	Palmitic acid, olegic, and stearic, in paste	do	50	05 ¹ / ₁₀
	Azotic or nitric acid	do	20	02 ¹ / ₁₀
	Saltpeter	do	30	03 ¹ / ₁₀
	Sulphates of soda, potash, copper, and iron	do	2 ¹ / ₁₀	00 ³ / ₁₀
	Carbonate of potash	do	5	00 ¹ / ₁₀
	Carbonate of potash, refined	do	50	05 ¹ / ₁₀
	Carbonate of soda, artificial	do	10	01 ¹ / ₁₀
	Carbonate of soda, refined, dry, and crystallized	do	10	01 ¹ / ₁₀
	Chlorate of sodium	Liter	8	00 ⁸ / ₁₀
	All other chemical products not specified, 5 per cent. ad valorem.			
16	Clocks and watches:			
	Watches in gold cases	Each	1,100	1 18
	Watches in other than gold cases	do	600	64
	Parts of watches, movements included	do	200	21
	Manufactures of parts of clocks	Kilo	200	21
	Clocks and manufactures for watches and clocks not specified, 20 per cent. ad valorem.			
17	Coal, &c.:			
	Coal	Ton	300	32
	Coke	do	600	64
	All other combustible fossils and products, 5 per cent. ad valorem.			
18	Copper:			
	Ingots		Free	
	Bar		Free	
	Sheet	Kilo	2	00 ¹ / ₁₀
19	Cotton manufactures:			
	Batting	do	200	21
	Thread, unbleached	do	135	14
	Thread, bleached	do	200	21
	Thread, dyed scarlet (p. b.)	do	135	14
	Thread, dyed, not otherwise specified	do	225	24
	Thread, stamped with more than one color (p. b.)	do	135	14
	Thread, twist	do	300	32
	Open textures, laces, and insertings	do	1,500	1 62
	Open textures, barege	do	600	64
	Open textures, tarlatan webbing, common tulle, crinoline, and similar textures (p. b.)	do	150	16
	Fine veiling, bobbinet, tulle, and similar goods (p. b.)	do	1,100	1 18
	Open textures, not specified, plain	do	1,100	1 18
	Open textures, not specified, worked	do	1,500	1 62
	Transparent textures, muslins, and cambric, unbleached	do	200	21
	Transparent textures, muslins, and cambric, white	do	240	25 ¹ / ₁₀
	Transparent textures not specified	do	700	75
	Close textures, plain, heavy canvas, not proper for sails, bleached or unbleached	do	100	10 ¹ / ₁₀
	Rough and coarse, unbleached or whitened	do	70	07 ¹ / ₁₀
	Glazed, brown, or whitened	do	150	16
	Cambric muslin, white	do	275	29
	Textures not specified, unbleached	do	125	13 ¹ / ₁₀
	Textures not specified, white	do	150	16
	Textures napped in one color	do	550	59 ¹ / ₁₀
	Textures napped in more than one color	do	750	81
	Counterpanes and blankets	do	550	59 ¹ / ₁₀
	Mole skins, dyed	do	225	24
	Mole skins, white or stamped	do	425	45
	Close textures	Kilo	550	59 ¹ / ₁₀
	Close textures, velveteens	do	225	24
	Close textures, imitation velvets	do	450	48
	Braids, twills, damasked or glazed, transparent or close, brown or white, except such as intended for print (p. b.)	do	300	32
	Textures, twilled, dyed, or stamped (p. b.)	do	500	54
	Twills for stamping	do	200	21
	Counterpanes	do	550	59 ¹ / ₁₀
	Tape	do	450	48
	Handkerchiefs and shawls of whatever description (p. b.)	do	600	64
	Carpets	do	200	21
	Wicks	do	500	54

Customs duties collected under the present tariff laws of Portugal—Continued.

Number.	Tariff classification.	Unit.	Tariff rates of duty.	Equivalent in United States money.
19	Cotton manufactures—Continued.			
	Cravats and neckties in any shape, finished or not (p. b.), 10 per cent. to be added to respective duties.			
	Ribbed textures (p. b.)	Kilo	1,000	\$1 08
	Binding, bobbin work and galloon, including tares, excepting cartons, paper or wood (p. b.).	do	700	75
20	Earthen, stone, and china ware:			
	Earthenware, ordinary	do	20	2½
	Earthenware, fine	do	100	10½
	Flint-ware, ordinary	do	2½	00½
	Flint-ware, fine	do	75	8½
	Porcelain (p. b.)	do	200	21
	Tiles	do	50	5½
	Bricks	do	10	01½
	Ceramic productions not specified	do	1	00½
21	Fertilizers, natural or artificial		Free	
22	Fish, 6 per cent. ad valorem.			
	Sea or fresh water, 6 per cent. ad valorem.			
	Fresh-water fish, preserved in any way	Kilo	35	4
	Salt-water fish, preserved in any way	do	4½	00½
	Prepared fish, not specified	do	33½	3½
	Fish in oil, including tare	do	70	7½
	Shell-fish, fresh or preserved	do	2½	¾
23	Flax, hemp, and jute, manufactures of	do	75	8½
	White flax and other similar filaments not specified, rough.	do	4	00½
	Tow in the rough	do	¾	3
	Hackled flax (p. b.)	do	20	2½
	Linen and filaments, hackled	do	60	6½
	Linen and hemp thread, brown or white	do	150	16
	Linen and hemp thread, dyed (p. b.)	do	200	21
	Linen and hemp thread, twist (p. b.)	do	300	32
	Jute thread or other similar filaments, bleached, unbleached, dyed, twisted, or not twisted (p. b.).	do	5	00½
	Lint		Free	
	Open textures, lace, insertings, tulles, bobbinets, and similar goods (p. b.)	Kilo	1,500	1 62
	Canvas for embroidery and the like (p. b.)	do	150	16
	Open textures, transparents not specified (p. b.)	do	1,500	1 62
	Close textures, hessians	do	70	7½
	Canvas not suitable for sails—			
	Bleached or unbleached	do	150	16
	Bleached or unbleached, dyed	do	250	27
	Hollands	do	250	27
	Heavy brown linen—			
	Unsuitable for sails	do	450	48
	Whitened	do	550	59½
	Fustian	do	1,000	1 08
	Damasked	do	750	81
	Linen or tow packing canvas—			
	Unbleached	do	450	48
	Sun bleached	do	550	59½
	Close textures, not specified	do	500	54
	Lace	do	500	54
	Carpets and rugs	do	200	21
	Handkerchiefs and shawls of whatever quality	do	500	54
	Cravats and neckties in whatever state, 10 per cent. to be added to duties, or respective duties for similar textures.			
	Knitted goods	do	1,000	1 08
	Passementerie, galloons, and lawns, including the tares, with the exception of cartons and wood.	do	700	75
24	Fruits:			
	Fresh fruits, European	do	10	01½
	Fresh fruits, exotic	do	02½	00½
	Dried fruits, European	do	30	03½
	Dried fruits, exotic	do	15	01½
	Preserved in brandy	do	70	07½
	Preserved in oil or vinegar	do	35	04
25	Furs, undressed		Free	
26	Glass, manufactures of:			
	Glass and crystal in polished plates, 25 per cent. ad valorem.			
	Crystal or glass for jewelers	Kilo	50	05½
	Crystal or glass, manufactured, not otherwise specified.	do	100	10½
	Vessels of common glass	do	5	00½
	Artificial stones	do	500	54

Customs duties collected under the present tariff laws of Portugal—Continued.

Number.	Tariff classification.	Unit.	Tariff rates of duty.	Equivalent in United States money.
26	Glass, manufactures of—Continued.		<i>Reis.</i>	
	Broken glass		Free	
	Vitrified mass, 30 per cent. ad valorem.			
27	Glucose:			
	In liquid state	Kilo	70	\$0 07 $\frac{1}{2}$
	In solid masses and granulated	do	90	10
28	Glue	do	30	03 $\frac{1}{2}$
29	Gunpowder:			
	Without cartridges including tares	do	200	21
	In cartridges, including the projectiles and tares	do	300	31 $\frac{1}{2}$
30	Hair:			
	Unmanufactured		Free	
	Prepared (p. b.)	Kilo	200	21
	Manufactured	do	3,000	3 24
	Manes, unmanufactured or prepared	do	20	02 $\frac{1}{2}$
	Hair mattresses, including accessories	do	100	10 $\frac{1}{2}$
	Manes, manufactured not otherwise specified	do	200	21 $\frac{1}{2}$
	Bristles	do	20	02 $\frac{1}{2}$
31	Hay		Free	
32	Hides and skins:			
	Hides or skins, green or prepared, of cattle, included in class 2:			
	Green	Kilo	5	00 $\frac{3}{4}$
	Dry	do	7 $\frac{1}{2}$	00 $\frac{1}{2}$
	For making hats		Free	
	Not specified, 20 per cent. ad valorem.			
33	Honey:			
	Without the wax	Kilo	40	04 $\frac{1}{2}$
	In the comb, 5 per cent. ad valorem.			
34	Hops, 5 per cent. ad valorem.			
35	Ice		Free	
36	India-rubber and manufactures:			
	Crude, purified, and vulcanized		Free	
	In masses of any form or in sheets; in silk elastic tissue.	Kilo	1,500	1 62
	Elastics of other tissues	do	750	81
	Vessels and tubes		Free	
	Manufactures of, not specified	Kilo	25	02 $\frac{1}{2}$
37	Iron and steel, manufactures of:			
	Mitraille		Free	
	Pig-iron (p. b.), 2 per cent. ad valorem.			
	Wrought and sheet, unmanufactured (p. b.), 2 per cent. ad valorem.			
	Iron, galvanized, or covered with zinc, lead, or any preparation.	Kilo	4	00 $\frac{3}{4}$
	Wire (p. b.)	do	2	00 $\frac{1}{2}$
	Open-work wire	do	50	05 $\frac{1}{2}$
	Cast, wrought, and wire nails, even with brass heads (p. b.).	do	50	05 $\frac{1}{2}$
	Cast tubes, 2 decimeters or less in diameter	do	10	01 $\frac{1}{10}$
	Cast tubes, from 2 to 4 decimeters	do	5	00 $\frac{1}{2}$
	Cast tubes, more than 4 decimeters	do	2	00 $\frac{1}{2}$
	Cast tubes, iron, not specified, painted (p. b.)	do	40	04 $\frac{1}{2}$
	Cast tubes, iron, polished, varnished, enameled, or covered with tin, zinc, or copper (p. b.).	do	80	08 $\frac{1}{2}$
	Cast tubes, iron, pieces weighing more than 100 kilograms (p. b.).	do	10	01 $\frac{1}{10}$
	Wrought or sheet iron—			
	Manufactured or painted only (p. b.)	do	100	10 $\frac{1}{2}$
	Polished, enameled, covered with pewter, zinc, or copper (p. b.).	do	160	16 $\frac{1}{2}$
	Wrought iron, manufactured—			
	Not specified, weighing more than 100 kilograms each (p. b.).	do	20	02 $\frac{1}{2}$
	Chains, except for ships' use	do	10	01 $\frac{1}{10}$
	Laminated sheet iron, including all ornamentation	do	400	42
	Laminated wire	do	50	05 $\frac{1}{2}$
	Steel—			
	Mitraille, unbroken steel		Free	
	Laminated or cast, not specified (p. b.), 2 per cent. ad valorem.			
	Laminated, for vehicle springs	Kilo	25	02 $\frac{1}{2}$
	Wire	do	50	05 $\frac{1}{2}$
	Cutlery with pearl, ivory, tortoise, or unicorn handles.	do	350	37 $\frac{1}{2}$
	Cutlery with whalebone or other hard horny material for handles.	do	300	32 $\frac{1}{2}$
	Cutlery, wood or metal handles, except gold or silver.	do	250	27
	Cutlery, handles inlaid with gold or silver	do	500	54

Customs duties collected under the present tariff laws of Portugal—Continued.

Number.	Tariff classification.	Unit.	Tariff rates of duty.	Equivalent in United States money.
37	Iron and steel, manufactures of—Continued.			
	Steel—Continued.		<i>Reis.</i>	
	Sheath knives	Kilo	100	\$0 10½
	Scissors	do	500	54
	Not specified	do	150	16
38	Jewelry:			
	Artificial stones and pearls	do	500	54
	Gold jewelry (p. b.)	do	20,000	21 60
	Silver jewelry (p. b.)	do	10,000	10 80
	Not of gold or silver	do	800	86
	Coral	do	200	21½
39	Lamps:			
	For chemical and laboratory purposes, glass or earthenware (p. b.)	do	1	00½
	For chemical and laboratory purposes, in metal (p. b.)	do	20	02½
	Not otherwise specified (p. b.)	do	200	21½
40	Lead:			
	Pig lead or sheets (p. b.)		Free	
	Shot		Free	
	Shot in alloy with antimony (p. b.)		Free	
	All manufactures of lead (p. b.)	Kilo	50	05½
41	Leather and manufactures of:			
	Tanned with the bark called Brazilian	do	10	01½
	Tanned soft with oak bark for lining	do	5	00½
	Kid and similar skins	do	750	81
	Rough parchment and in sheets		Free	
	Parchment not specified	Kilo	200	21½
	Morocco, colored, and imitations thereof, varnished (p. b.)	do	300	32½
	For ornamental purposes, with the attachments	do	6,000	6 48
	Gloves (p. b.)	do	100	10½
	Manufactures of, not specified, including metals and trimmings	do	500	54
	Scraps and raspings (p. b.)		Free	
42	Lime and cement		Free	
43	Malt beer	Decaliter	680	73
44	Medical instruments:			
	Surgical instruments manufactured of gum elastic	Kilo	25	02½
	All others not specified, 20 per cent. ad valorem.			
45	Naval stores:			
	Tar		Free	
	Resin—			
	Pitch	Kilo	12½	13½
	Turpentine	do	5	00½
46	Oil cake and meal:			
	Linseed meal (no duty specified for oil cakes), 5 per cent. ad valorem.			
47	Oils:			
	Mineral—			
	Petroleum, crude or refined, and its residuum	do	50	
	All other combustible mineral oils, 5 per cent. ad valorem.			05½
	Vegetable—			
	Olive oil	Decaliter	700	75
	Almond oil	Kilo	100	10½
	Castor, purified	do	200	21½
	Linseed	do	40	04½
	Nutmeg	do	40	04½
	Cotton-seed	Decaliter	700	75
	Oils not specified	Kilo	70	07½
	Concrete		Free	
	Oil, volatile, of turpentine	Kilo	5	00½
	Volatile oils not specified	do	500	54
	Animal—			
	Whale	do	5	00½
	Fish oil, not specified	do	5	00½
	Cod-liver and analogous oils	do	10	01½
	Fish fat	do	7½	00½
	Vegetable—			
	Amber, 5 per cent. ad valorem.			
	Oil of tar, 5 per cent. ad valorem.			
	Oil of lavender	do	500	54
48	Paraffine and wax:			
	Paraffine and its productions—			
	Not otherwise specified, 5 per cent. ad valorem.			
	Refined in candles or cakes	do	70	07½
	Wax—			
	Crude yellow	do	10	01½
	White	do	30	03½
	Manufactured	do	50	05½

Customs duties collected under the present tariff laws of Portugal—Continued.

Number.	Tariff classification.	Unit.	Tariff rates of duty.	Equivalent in United States money.
48	Paraffine and wax—Continued.			
	Spermaceti—		<i>Reis.</i>	
	Crude		Free	
	Purified	Kilo	15	\$0 01 $\frac{3}{4}$
	Manufactured	do	50	05 $\frac{1}{2}$
49	Paints:			
	Colors in powders, 5 per cent. ad valorem.			
	Paints prepared in oil, 5 per cent. ad valorem.			
50	Paper, manufactures of:			
	Writing paper	do	100	10 $\frac{3}{4}$
	Stamped or painted	do	50	05 $\frac{1}{2}$
	Other sorts of paper (p. b.)	do	15	01 $\frac{3}{4}$
	Card-board and paste-board	do	7 $\frac{1}{2}$	00 $\frac{3}{4}$
	Playing cards	do	100	10 $\frac{3}{4}$
	Pulp suitable for manufacture of paper		Free	
	Old paper, rags, &c.		Free	
51	Plated ware	Kilo	200	21 $\frac{1}{2}$
52	Provisions:			
	Beef, dry, with or without salt	do	20	02 $\frac{1}{2}$
	Meat not specified, in whatever form	do	75	08 $\frac{1}{2}$
	Oleomargarine	do	50	05 $\frac{1}{2}$
	Lard	do	50	05 $\frac{1}{2}$
	Butter	do	150	16
	Cheese, fine	do	175	18 $\frac{1}{2}$
	Cheese, common	do	100	10 $\frac{3}{4}$
53	Quicksilver (p. b.)		Free	
54	Seeds for cultivation		Free	
	Used for perfumery	Kilo	50	05 $\frac{1}{2}$
	Not specified, 20 per cent. ad valorem.			
	Cotton seed, clean, 25 per cent. ad valorem.			
	Oleaginous seeds		Free	
55	Soap	Kilo	50	05 $\frac{1}{2}$
	In small cakes	do	150	16
	Medicated, 5 per cent. ad valorem.			
56	Spirits:			
	Spirit and simple alcohol	Every de- caliter of pure alco- hol.	1,200	1 29
	Spirit and alcohol, prepared, in whatever vessels im- ported.	For each liquid de- caliter.	1,200	1 29
	Gin	do	1,200	1 29
	Liqueurs and cognac (p. b.)	do	1,500	1 62
	Beverages not specified	do	1,100	1 18
57	Starch	Kilo	25	02 $\frac{1}{2}$
48	Sugar:			
	Refined	do	125	13 $\frac{1}{2}$
	Not refined	do	90	09 $\frac{1}{2}$
	Molasses	do	20	02 $\frac{1}{2}$
59	Tin plates	do	400	43
60	Tobacco:			
	In rolls	do	1,440	1 55
	Leaves, ground, and stalks	do	1,680	1 81
	Cigars	do	2,640	2 85
	Cigarettes, snuff, and all others manipulated, and cut stalks.	do	2,160	2 33
61	Vegetables:			
	Dried beans	do	8	00 $\frac{3}{4}$
	Dried, not specified	do	20	02 $\frac{1}{2}$
	Potatoes	do	5	00 $\frac{1}{2}$
	Green		Free	
	Garden stuff, green or dry		Free	
62	Wood:			
	In the rough (p. b.)		Free	
	Boards sawed—			
	Up to 2.75 centimeters thick	Meter	10	01 $\frac{1}{2}$
	From 2.75 centimeters to 5.50 centimeters	do	20	02 $\frac{1}{2}$
	From 5.50 centimeters to 8.25 centimeters	do	30	03 $\frac{1}{2}$
	All above 8.25 centimeters in thickness	do	40	4 $\frac{1}{2}$
	Veneers for cabinet-makers (p. b.)		Free	
	Veneers, not specified	Kilo	10	1 $\frac{1}{2}$
	Rafters and beams	Meter	20	2 $\frac{1}{2}$
	Timbers	do	100	10 $\frac{1}{2}$
	Shingles	do	20	2 $\frac{1}{2}$
	Poles	Each	40	4 $\frac{1}{2}$
	Staves, $\frac{1}{2}$ per cent. ad valorem.			
	Masts, $\frac{1}{2}$ per cent. ad valorem.			
	Hoops for casks, $\frac{1}{2}$ per cent. ad valorem.			
	Firewood	Kilo	2	00 $\frac{1}{2}$

RUSSIA.

Russian tariff of imports.

[Prepared by Minister P. M. B. Young.]

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
1	Agricultural implements, machines without attachment of steam engines. NOTE.—Extra parts of the machines according to the special tariffs to which they may belong, such as, wood, iron, or other material.	1 pood..	<i>Rubles.</i> 0. 50	36 lbs...	\$0 25
2	Animals, cattle, hogs, horses, mules, sheep, &c .....	.....	Free.....	.....	.....
3	Art works:				
	(a) Pictures, drawings, lithographs, plans, photographs, without frames.	.....	Free.....	.....	.....
	(b) Frames, gilt, or otherwise	1 pood..	5. 00	36 lbs...	2 50
	(c) Articles for museums, scientific, archæological, numismatical, or natural, historical collections, shells, plants, mummies, petrifications, antiquities, medallions, old coins, antique arms, and all other curiosities which have not the qualification of usual merchandise.	.....	Free.....	.....	.....
	(d) Alabaster articles with or without ornaments..	1 pood..	1. 45	36 lbs...	72½
	(e) Plaster, marble, porphir, slate, serpentine, and other productions of stone for ornaments.	..do	. 60	..do	30
	(f) Pottery ornaments, painted or gilt.....	..do	1. 00	..do	65
	(g) Faience goods, white or one color, when made by molds.	..do	1. 00	..do	50
	(h) Faience goods with ornamented edges	..do	1. 30	..do	65
	(i) Faience goods when painted or gilt, &c	..do	3. 30	..do	1 65
	(k) Porcelain ornaments with painting, arabesques, flowers, &c.	..do	10. 55	..do	5 27½
	(l) Porcelain and bisque statues, ornaments, vases, &c., with painting, gilding, and bronze	..do	21. 10	..do	10 55
	(m) Glass and crystal ornaments, plain.....	..do	4. 85	..do	2 42½
	Glass, colored and with painting, gilt, silver bronze.	..do	9. 70	..do	4 85
	(n) Platina works.....	Pound ..	20. 00	.....	.....
	(o) Silver ornaments.....	..do	2. 90	.....	.....
	(p) Gold and jewelry work with precious stones, pearls, &c.	..do	43. 55	.....	.....
	(r) Lace and fringe work as well as cords of gold, silver, &c.	..do	7. 20	.....	.....
	(s) Bronze and other copper alloys (except brass) with or without varnish covering in one piece or for separation if each piece exceeds one pound (Russian).	..do	15. 85	.....	.....
	(t) Bronze and other copper alloys, covered with gold, platina, or silver, or their substitutes in pieces of more than one pound (Russian).	..do	26. 40	.....	.....
	(u) Plated goods in silver, also comes under this tariff.	.....	.....	.....	.....
	Imitations (s, t, u) if in less weight than one pound each piece.	1 pood ..	52. 80	36 lbs...	26 40
	Articles of ornament of copper and brass, except those named, as well as articles for house use of copper or brass, in connection with tin, leather, or other material.	..do	4. 00	..do	2 00
	Cast-iron ornaments, polished, cut, bronzed, tinned, or zinc, and with other common metals or wood combined.	..do	1. 20	..do	60
	Wood carvings	..do	5. 00	..do	2 50
	Mosaics or coral ornaments	..do	2. 40	..do	1 20
4	Bark and extracts:				
	For tanning, bark of all kinds, and acorns.....	..do	. 06	..do	03
	Extracts of indigo, cochineal, safflor.....	..do	5. 00	..do	2 50
	Acids of citron and tannin, &c.....	..do	4. 00	..do	2 00
	All chemical products and extracts not specially found in the tariff.	..do	2. 40	..do	1 20

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
5	Blacking	1 pood ..	Rubles. 2.40	36 lbs ..	\$1 20
6	Bones, hoofs, horns, &c.:				
	Bones charred, powdered, or burned to coal	do	.12	do	06

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
15	Chemicals—Continued.		<i>Rubles.</i>		
	Vitriol of copper, white or zinc, or mixed with iron or copper.	1 pood ..	.60	36 lbs...	\$0 30
	All chemical productions not specially mentioned.	..do	2.40	..do	1 20
16	Clocks and watches:				
	Tower clocks.....	Each	21.80	Each	10 90
	Alarm clocks, in brass cases	1 pood ..	4.00	36 lbs...	2 00
	Clocks without weights, in wooden cases	..do	7.90	..do	3 95
	Clocks, common wood skeleton movement, by weight	Each	.40	Each	20
	Clocks of wood with copper or wooden wheels.....	..do	.40	..do	20
	Watches, gold or gilt.....	..do	1.75	..do	87½
	Watches, silver, with gilt edges	..do	.90	..do	45
	Watches, silver and all kinds, except those mentioned.	..do	.90	..do	45
	Movements of watches or clocks, without casing.....	..do	.90	..do	45
	Watch and clock material	Pound ..	.12	.....	.....
17	Coal, mineral:				
	Baltic ports	1 pood ..	.00½	36 lbs...	00½
	White Sea .....	.....	Free	.....	.....
	Black Sea and Sea of Azof.....	1 pood ..	.02	36 lbs...	01
	Charcoal powder	..do	.26	..do	13
	Charcoal in plates or cylinder for use of batteries..	..do	.30	..do	15
18	Copper:				
	Bars, plained.....	..do	4.00	..do	2 00
	Raw.....	..do	2.00	..do	1 00
	Bands with brass alloy.....	..do	2.00	..do	1 00
	Plates, prepared for use on one side.....	..do	2.00	..do	1 00
	Red and green or mixed metals, as tombac, prince metal, argentum, British metal, with nickel, cobalt, bismuth, cadmium, aluminium, and their various mixtures, in block, pieces, or powder.	..do	1.50	..do	75
	Pressed, or with holes in forms of nets, &c.....	..do	4.00	..do	2 00
	Plates, ground or polished.....	..do	4.00	..do	2 00
	Plates, bent and shaped.....	..do	4.00	..do	2 00
	In plain plates, sheets, bars, and blocks.....	..do	2.00	..do	1 00
	Ashes.....	..do	.04	..do	02
19	Cotton in bales	..do	.45	..do	22½
	Partly prepared to be used in spinning.....	..do	.55	..do	27½
	Dyed to be used as batting.....	..do	1.45	..do	72½
	Yarn, low numbers, up to No. 45 English—				
	Unbleached	..do	3.60	..do	1 80
	Bleached or dyed with exception of Adrianopol red.	..do	4.70	..do	2 35
	Dyed with Adrianopol red.....	..do	5.00	..do	2 50
	Higher numbers, above No. 45 English—				
	Unbleached.....	..do	5.00	..do	2 50
	Bleached and dyed.....	..do	6.00	..do	3 00
	Sewing and knitting, all kinds.....	..do	6.00	..do	3 00
	Lamp-wicks, &c	..do	4.80	..do	2 40
20	Earthenware, stone, china ware :				
	Earthenware, out of common clay or sandstone, of all kinds for house use.	..do	.26	..do	13
	Ornaments, gilt or painted.....	..do	1.30	..do	65
	Deft ware, faience—				
	White and one shade color in the mass, without ornaments, and when also in pressed patterns.	..do	1.00	..do	50
	White, when with colored patterns and edges or stripes.	..do	1.30	..do	65
	White, with painting, gilding, or different designs.	..do	3.30	..do	1 65
	Porcelain or china:				
	White and of one shade, with colored edges or stripes in gilding or otherwise, but without any other designs.	..do	5.30	..do	2 65
	When with painting or gilt designs.....	..do	10.55	..do	5 27½
21	Fertilizers .....	.....	Free	.....	.....
22	Fish:				
	Fresh	1 pood ..	.12	36 lbs...	06
	Dried	..do	.22	..do	11
	Smoked and salted, except herrings	..do	1.20	..do	60
	In oil and the like	..do	4.80	..do	2 40
	Herring, smoked or salted.....	..do	.22	..do	11
23	Flax, hemp, and jute:				
	Flax, crude.....	.....	Free	.....	.....
	Flax, prepared and colored.....	1 pood ..	1.45	36 lbs...	72½

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
23	Flax, hemp, and jute—Continued.		<i>Rubles.</i>		
	Flax, prepared and not colored		Free		
	Hemp, all kinds		Free		
	Jute, not spun but in fiber	1 pood ..	.40	36 lbs ..	\$0 20
	Jute yarn in cloth	do	5.30	do	2 65
24	Fruits, fresh:				
	Salted, dried, or preserved	do	1.20	do	60
	Oranges, citrons, and their kind	do	.50	do	25
	Grapes	do	1.55	do	77½
	Capers and olives, dried or in salt or oil, in barrels, baskets, or hermetically packed.	do	2.40	do	1 20
	If, however, in vinegar and oil, in glass or porcelain, hermetically packed.	do	4.80	do	2 40
	St. Julius bread (Locust)	do	.50	do	25
	Nuts: Walnuts, filberts, chestnuts, cocoa-nuts, &c.	do	.95	do	47½
	Almonds in shell, as well as pistachio	do	2.40	do	1 20
	Berries of all kinds, dried as plums, figs, raisins, dates not in sugar.	do	1.80	do	90
	Fruits, preserved in pots or glasses, in liquor, rum, cognac, sirup, pastilla, or chocolate.	do	9.60	do	4 80
25	Furs:				
	All kinds, except those mentioned	do	18.00	do	9 00
	Sable, elk-brown, fox, altis (fitchet), chinchilla, ice-fox, sea-otter and sea-bear.	do	36.00	do	18 00
	Muskrat, opossum, kangaroo, wolf, tiger, panther, and bear.	do	6.60	do	3 30
	Fox, martyn, fish-otter, if brought by Russian ships out of Archangel Government, or by its inhabitants.	do	6.60	do	3 30
26	Glass:				
	Window, colored, ground, milky, in mass and fluted.	do	2.40	do	1 20
	If fluted on side	do	1.45	do	72½
	Glass, soluble in water	do	.30	do	15
	Window-glass not specially described	do	1.45	do	72½
	Beads on strings	do	2.15	do	1 07½
	Negatives, photographic uses	do	9.70	do	4 85
	Looking-glasses:				
	100 square verschoks, + 30 per cent.	Pound ..	.06	Pound ..	03
	101 to 200 verschoks, + 30 per cent.	Versch. ..	.00½		
	201 to 300 verschoks, + 30 per cent.	do	.01		
	301 to 400 verschoks, + 30 per cent.	do	.01½		
	401 to 500 verschoks, + 30 per cent.	do	.02		
	501 to 600 verschoks, + 30 per cent.	do	.02½		
	601 to 800 verschoks, + 30 per cent.	do	.02½		
	Above 800 verschokssquare, ¼ kopeck extra for each square verschok.				
	Looking-glass without amalgam, as cut-glass, window-glass, with molded patterns.	1 pood ..	1.45	36 lbs ..	72½
	Manufactured, as ornaments covered with amalgam.	do	9.70	do	4 85
	Reflectors and balls for gardens	do	9.70	do	4 85
	Wine-glass out of white-glass, cut, &c.	do	9.70	do	4 85
	Broken		Free		
	Small vases and double glass, with ornaments, &c.	1 pood ..	4.85	36 lbs ..	4 85
	Stoppers	Pound ..	.45	Pound ..	22½
	Ink-stands in unfinished state, according to state and quality from 60 kopecks to 4 rubles, 85 cents per pood.				
27	Glucose: Candies, confectioneries, &c.	1 pood ..	9.60	36 lbs ..	4 80
28	Glue:				
	Fish	do	6.00	do	3 00
	Bones, brown	do	0.13	do	7½
	Bones, clear and transparent	do	6.00	do	3 00
	Bones, not transparent	1 pood ..	.13	36 lbs ..	7½
	Bones, for cabinet-makers, shoemakers, &c.	do	.13	do	7½
	Transparent bones, or gum-arabicum liquid, even if not perfumed.	do	6.00	do	3 00
29	Gunpowder (prohibited).				
30	Hair:				
	Horse, manufactured	do	2.90	do	1 45
	Vegetable, raw		Free		
	Human, manufactured	Pound ..	.80	Pound ..	40
31	Hay		Free		
32	Hides and skins:				
	Hides, raw, salted	1 pood ..	.50	36 lbs ..	25
	Small hides, tanned with alum, saffian, &c.	do	10.80	do	5 40
	Large hides of cattle, horses, &c., tanned, and parchment.	do	6.00	do	3 00
	Patent leather	do	7.90	do	3 95

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
33	Honey	1 pood ..	<i>Rubles.</i> 1. 20	36 lbs...	\$0 60
34	Hops	do	1. 45	do	72½
35	Ice		Free		
36	India-rubber manufactures:				
	Raw	1 pood ..	. 33	36 lbs...	16½
	Prepared and worked, as articles out of rubber, caoutchouc, or gutta-percha, without any other mixtures.	do	3. 65	do	1 82½
	Prepared and worked, as articles out of rubber, caoutchouc, or gutta-percha, when containing other material.	do	6. 60	do	3 30
	Texture obtained by weaving, and threads or manufactures covered by any other material.	do	24. 20	do	12 10
	Shoes in connection with other material	do	11. 00	do	5 50
37	Iron and steel:				
	Iron except as named hereafter	do	. 40	do	20
	Iron bars, shaped	do	. 90	do	45
	Iron, sheet, not specially worked	do	. 60	do	30
	Iron, sheet, punched	do	1. 20	do	60
	Galfvrit (?)	do	1. 55	do	77½
	Painted or covered by zinc or copper	do	1. 55	do	77½
	Black	do	. 60	do	30
	Ground and polished, if in pieces above 5 pounds.	do	1. 20	do	60
	Ground and polished, if in pieces under 5 pounds.	do	2. 50	do	1 25
	Enameled or other fine finish	do	3. 00	do	1 50
	Gilt or painted	do	6. 00	do	3 00
	Wire, or same of steel, up to one-half inch	do	1. 10	do	55
	Manufactures of wire, steel, or iron		2. 75	do	1 37½
	Steel sewing-needles	Pound ..	. 65		
	Steel knitting-needles, pack, saddler, and sail-makers' use.	do	. 35		
	Knives and scissors, tweezers, &c.	do	15. 85		
	In connection with other material, silver, gold, mother-of-pearl, bronze, ivory, &c.	do	31. 70		
	Common pocket cutlery	do	6. 60		
	Arms, cut-and-thrust sabers, and small arms, except air-guns (prohibited).	1 pood ..	24. 00	36 lbs...	12 00
	Scythes, straw-cutters, mowing-machines, sheep-shears, shovels, picks, barrows, and forks.	do	1. 20	do	60
	Tools for artisans	do	1. 20	do	60
	Machines, for factories, of all kinds, with copper or parts of other material.	do	3. 00	do	1 50
	Locomotives, water-engine, or any machine not containing unproportionate parts of copper.	do	1. 20	do	60
	Locomotives for railways	do	1. 40	do	70
	Iron buckets	do	1. 20	do	60
	Iron, sheet, fashioned	do	40	do	20
	Iron, cast, or steel, in bars, puddling, or blocks.	do	40	do	20
	Steel rails	do	50	do	25
	Iron in powder (ore)	do	04	do	02
	Iron boilers	do	1. 20	do	60
	Iron, blacksmiths' work	do	90	do	45
38	Jewelry:				
	Gold	Pound ..	43. 55		
	Silver	do	2. 90		
39	Lamps:				
	Edison's, for electrical light	1 pood ..	7. 20	36 lbs...	3 60
	Other lamps under brass and other metals to which they belong.				
40	Lead:				
	Bars or pieces	do	. 10	do	05
	Leaves, sheets, or pipes	do	. 20	do	10
	Ashes	do	. 10	do	05½
	Articles, except those mentioned	do	1. 05	do	52½
41	Leather. (See Hides and skins.)				
42	Lime and cement:				
	Lime, chloride, burnt or ground	do	. 44	do	22
	Baltic ports	do	. 03	do	01½
	Other ports		Free		
	Cement, cement bricks, or burnt alabaster	1 pood ..	. 09	36 lbs...	04½
43	Malt liquors:				
	Malt	do	. 12	do	06
	Beer in barrels	do	1. 30	do	65
	Beer in bottles	Bottle ..	. 20	Bottle...	10

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
			<i>Rubles.</i>		
44	Medical instruments: Chemical and surgical.....	1 pood ..	7.25	36 lbs....	\$3 62½
45	Naval stores:				
	Tar, all kinds	do	.06	do	03
	Turpentine.....	do	.40	do	20
	Resin	do	.06	do	03
	Pitch.....	do	.06	do	03
46	Oil, cake and meal: Oil containing fruits, ground or broken up.....	do	.12	do	06
47	Oils, vegetable, mineral, and animal:				
	Bitter almonds, with mixture of benzol.....	do	15.85	do	7 92½
	Bitter almonds, with addition of other fatty oils.	do	15.85	do	7 92½
	Bitter almonds, pure.....	do	15.85	do	7 92½
	Bitter almonds, containing cyanacid (prohibited).	do		do	
	Cocoa-nut	do	.65	do	32½
	Fatty, with or without mixture of albumen.....	do	2.20	do	1 10
	Seal, and tallow.....	do	.36	do	18
	Lamp	do	.70	do	35
	Hair or pomade.....	do	39.60	do	19 80
	From bones	do	2.20	do	1 10
	Laurel, for chemical use.....	do	15.35	do	7 92½
	Mineral, like paraffine and mixture of other fatty substances or vegetable oil.	do	2.20	do	1 10
	Muscat.....	do	15.85	do	7 92½
	Olive.....	do	2.20	do	1 10
	Palm	do	.65	do	32½
	Vegetable, not named	do	2.20	do	1 10
	Machine	do	.70	do	35
	Turpentine.....	do	.40	do	20
	Vitriol	do	.22	do	11
	Varnish	do	.20	do	10
48	Paraffine and wax:				
	Paraffine	do	1.20	do	60
	Wax for grafting.....	do	1.20	do	60
	Vegetable wax (komauba)	do	1.20	do	60
	Beeswax	do	1.20	do	60
49	Paints:				
	Not specially named.....	do	2.40	do	1 20
	Aniline, all produced out of coal-tar.....	do	15.00	do	7 50
	Antimony, arsenic, cobalt and chrome.....	do	2.20	do	1 10
	Iron.....	do	.30	do	15
	Copper, except out of verdigris.....	do	2.20	do	1 10
	Kaolin—				
	Dried in small wooden leaves or cases, polished or painted.	Pound.	.20	.....	.....
	In common packing	1 pood ..	5.00	36 lbs....	2 50
	Prepared with oil of carbol.....	do	2.40	do	1 20
	Known as English red	do	.30	do	15
	For painting cheese (onato)	do	.30	do	15
50	Paper:				
	Bristol board (visiting cards, &c.).....	do	3.95	do	1 97½
	Chinese silk, wrapping	do	7.90	do	3 95
	For cigarettes	do	7.90	do	3 95
	With color, all kinds	do	7.90	do	3 95
	Colored, without any printing, but glazed.....	do	3.95	do	1 97½
	Copy paper.....	do	3.95	do	1 97½
	Plain, but glued	do	3.95	do	1 97½
	With printed or other ornaments.....	do	7.90	do	3 95
	With indigo or aniline, shaded	do	2.65	do	1 32½
	Shaded with sulphur or saltpeter.....	do	.60	do	30
	Pasted upon loose cloth	do	3.95	do	1 97½
	Designs for typographs, book-binding and confectations.	do	7.90	do	3 95
	Writing and lined for notes and letters.....	do	2.40	do	1 20
	Leather, with printing or blank.....	do	10.55	do	5 27½
	For patterns, which printed thereon, leathered	do	10.55	do	5 27½
	Knitting patterns	do	2.40	do	1 20
	Not glued, plain	do	7.90	do	3 95
	Impregnated with tar.....	do	.60	do	30
	Water-closet	do	3.95	do	1 97½
	For destruction of insects.....	do	.60	do	30
	Cuttings		Free		
	Sheets, with designs for cutting ornaments.....	1 pood ..	7.90	36 lbs....	3 95
	Mache, unfinished	do	.60	do	30
	Finished and polished.....	do	5.00	do	2 50
	Material of wood	do	.20	do	10
	Material, of wood in boards.....	do	.26	do	13
	Asbestos.....	do	.60	do	30

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
50	Paper—Continued.		<i>Rubles.</i>		
	Pasteboards, all kinds.....	1 pood ..	.60	36 lbs...	\$0 30
	Board for photographs and the like	do	7.90	do	3 95
	Board, polished	do	2.40	do	1 20
	NOTE.—Blanks and lithographs undergoing a change.				
51	Plated ware. (See Articles of Art, No. 3.)				
52	Provisions:				
	Flour (except potato flour).....	do	.12	do	06
	Flour, potato.....	do	.70	do	35
	Starch	do	1.20	do	60
	Rice, cleaned.....	do	.85	do	42½
	Rice, uncleaned.....	do	.50	do	25
	Vermicelli, macaroni, sage, arrowroot	do	1.30	do	65
	Salt	do	.20	do	10
	Salt, in Archangel ports	do	.10	do	5
	Salt for salting fish on the Murman coast		Free		
	Salt in the ports of Black Sea and Sea of Azof prohibited.				
	Meat, fresh.....		Free		
	Meat, smoked, salted, &c	1 pood ..	.95	36 lbs...	47½
	Meat conserves of all kinds, sauces, pickles, soups, olives, all kinds, fruits, and vegetables.	do	4.80	do	2 40
	Cheese	do	6.00	do	3 00
	Butter.....	do	.50	do	25
	Lard	do	.50	do	25
	Margarine (comes probably under fatty oils).....	do	2.20	do	1 10
53	Quicksilver	do	2.40	do	1 20
54	Seeds:				
	Not specially mentioned.....		Free		
	Mill	1 pood ..	.50	36 lbs...	25
	Oil, in their shells	do	.12	do	06
	Plants, exotic	do	.12	do	06
55	Soap:				
	Toilet, in small pieces.....	do	7.20	do	3 60
	Other	do	1.80	do	90
56	Spirits (can only be imported in bottles as whisky, cognac, rum, arac, &c).	Bottle ..	.75	Bottle ..	37½
57	Starch.....	1 pood ..	1.20	36 lbs...	60
58	Sugar:				
	Raw, ground, or pieces.....	do	2.20	do	1 10
	Loaf, lump, or candy, refined.....	do	3.30	do	1 65
	Molasses, not mentioned.....				
	Sirup, not of honey.....	do	1.20	do	60
59	Tin:				
	Bars and plates, or broken.....	do	.45	do	22½
	Light sheets or leaves, colored or not, used as foil.....	do	.85	do	42½
60	Tobacco:				
	In leaf or bundles	do	15.40	do	7 70
	Cigars	Pound ..	1.20		
	Cut and in packages.....	do	1.20		
	Rolled into cheeroots, and smoking or powdered snuff.	do	1.00		
	Stems	1 pood ..	15.40	36 lbs...	7 70
61	Vegetables:				
	Salted, in water, dried and pressed.....	do	.65	do	32½
	Conserves in boxes, glasses, &c	do	4.80	do	2 40
	Fresh	do	.12	do	06
	Conserves in oil or otherwise.....	do	4.80	do	2 40
62	Wood:				
	Valuable for cabinet and turning as pack cedar, cypress, mahogany, nut, palm, rose, palisander, in square and any shape, blocks and boards.	do	.12	do	06
	Veneer	do	.60	do	30
	Brazil wood or logwood, sumach.....	do	.06	do	03
	If ground.....	do	.30	do	15
63	Wool:				
	Natural washed or not washed	do	1.00	do	50
	Colored, also shoddy, mungo, lain.....	do	2.00	do	1 00
	Combed	do	3.00	do	1 50
	Combed and colored.....	do	4.50	do	2 25
	Spun, of all kinds, with or without cotton, flax, or hemp—				
	If not colored.....	do	7.50	do	9 75
	Colored.....	do	9.00	do	4 50

Russian tariff of imports—Continued.

Number.	Articles.	Russian tariff rates.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
64	Zinc:		<i>Rubles.</i>		
	Sheets, plain	1 pood ..	.85	36 lbs ...	\$0 42½
	Sheets, polished or plated with nickel.....	..do	3.30	..do	1 65
	Manufactured, unpolished and not colored, and consisting of not finished articles, in pieces, lumps.	..do	1.30	..do	65
	Goods, in connection with other metals or covered therewith, in pieces over 3 Russian pounds.	..do	3 30	..do	1 65
	Paint or zinc, white	..do	.55	..do	27½

All tariffs are payable in gold, the difference ranging according to the value of the paper currency of the country.

One pound English equals 1.10763 Russian pounds; 36 English pounds equal 1 Russian pood; 1 yard equals 1 archerie 4.57 verschoks.

Where pounds are quoted it means Russian pounds.

The full tariff of Russia was printed in Consular Reports No. 25, p. 186.

SERVIA.

The full Servian tariff was printed in Consular Reports No. 33, p. 601.

H. Ex. 20—62

SPAIN.

Tariff on products and manufactures of the United States at Malaga, Spain.

[Prepared by Consul H. C. Marston.]

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States currency.
			<i>Pesetas.</i>	
1	Agricultural implements.....	100 kilos....	1. 00	\$0. 1930
2	Animals;			
	Cattle.....	Each.....	13. 80	2. 6634
	Hogs.....	do.....	8. 40	1. 6212
	Horses (castrated).....	do.....	128. 30	24. 7610
	Studs and mares.....	do.....	31. 50	6. 0795
	Mules.....	do.....	19. 00	3. 7828
	Sheep and all other.....	do.....	1. 10	. 2123
3	Works of art:			
	Paintings.....	do.....	1. 00	. 1930
	Sculpture:			
	Marble.....	100 kilos....	8. 00	1. 5440
	Bas-relief—			
	In copper, painted or varnished.....	do.....	125. 00	24. 1250
	Plated or nickel plated.....	do.....	250. 00	48. 2500
	In zinc, painted or varnished.....	do.....	26. 00	5. 0180
	Gilded, plated or nickel plated.....	do.....	45. 00	8. 6850
	In all other metals.....	do.....	37. 50	7. 2375
	In all other metals, gilded, plated or nickel plated.....	do.....	45. 00	8. 6850
	In wood.....	do.....	36. 00	6. 9480
	In wood, gilded.....	do.....	112. 00	21. 6160
	In cast-iron.....	do.....	7. 50	1. 4475
	In paste, meerschaum, or bone.....	do.....	2. 50	. 4825
	In clay or plaster.....	do.....	1. 50	. 2895
	In charcoal or papier-maché—			
	Unfinished.....	100 kilos....	8. 00	1. 5440
	Finished.....	Kilogram....	1. 60	. 2895
	In ivory.....	do.....	12. 50	2. 4125
	(Excepting all sculpture made in foreign countries by Spanish artists, as well as those purchased by the Government, corporations, or others intended for Spanish museums, provided such facts are proven.)		Free.....	.....
4	Barks and extracts:			
	Extracts for dyeing purposes.....	100 kilos....	3. 00	. 5790
	Tanners' bark.....	do.....	. 10	. 0193
5	Blacking.....	do.....	25. 60	4. 9408
6	Bones, hoofs, and horns, &c., in bulk, for manufacturing purposes:			
	Bones, &c.....	Kilogram....	. 05	. 0096
	Hoofs.....	100 kilos....	. 50	. 0965
7	Books:			
	Bound or not bound—			
	Printed in the Spanish language.....	do.....	42. 00	8. 1060
	Printed in foreign languages.....	do.....	10. 00	1. 9300
	Printed pictures, maps, or designs.....	Kilogram....	1. 25	. 2413
8	Brass and brass manufactures:			
	All sheets, blocks, nails, or tubes.....	100 kilos....	1. 60	. 3088
	All worked metal, burnished or not.....	do.....	37. 50	7. 2375
	Same in gilded objects, plated or nickel plated.....	do.....	45. 00	8. 6850
9	Breadstuffs:			
	Barley.....	do.....	3. 20	. 6176
	Indian corn.....	do.....	3. 20	. 6176
	Other grains.....	do.....	3. 20	. 6176
	Rice—			
	Unshelled.....	do.....	4. 00	. 7720
	Shelled.....	do.....	8. 00	1. 5440
	Wheat.....	do.....	5. 82	1. 1232
	Flour.....	do.....	8. 73	1. 6848
	Bread and biscuits.....	do.....	14. 00	2. 7020
10	Buckets:			
	Wooden.....	do.....	10. 00	1. 9300
	India rubber.....	do.....	1. 85	. 3570

Tariff on products and manufactures of the United States at Malaga, Spain—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States currency.
10	Buckets—Continued.		<i>Pesetas.</i>	
	Canvas	100 kilos	20. 80	\$4. 0144
	Cast-iron	do	7. 50	1. 4475
	Wrought iron	do	24. 00	4. 6320
	Zinc, iron	do	26. 00	5. 0180
	Casks of all kinds, iron, hooped, or otherwise	do	10. 00	1. 9300
11	Brooms and brushes:			
	Hair, clothes, and nail brushes—			
	With handles of wood	do	36. 00	6. 9480
	Ordinary quality	do	20. 00	3. 8600
12	Candles:			
	Paraffine, wax, and sperm	do	50. 00	9. 6500
	Paraffine, wax and sperm material, not made up	do	16. 50	3. 1845
13	Carriages:			
	Four-seat carriages, vis-a-vis, with wood sides, front seat, with or without cover, new, part used, or repaired.	Each	1, 000. 00	193. 0000
	Two-seat carriages, with front seat or without, omnibuses for more than fifteen seats, and stages, new, part used, or repaired.	do	750. 00	144. 7500
	Two or four wheels, without wood sides or without cover, of any number of seats, and all other carriages not above mentioned, new, part used, or repaired.	do	312. 50	60. 3125
	Railway wagons or tramways, and all pieces ready manufactured for the same.	100 kilos	37. 90	7. 3147
14	Cars:			
	Railway, steam; all other cars or vans for railways, and pieces for same quite finished.	do	10. 85	2. 0940
	Transport vans and hand carts	do	10. 00	1. 9300
15	Chemicals:			
	Muriatic acid or chlorodical acid	do	1. 00	. 1930
	Nitric acid	do	4. 00	. 7720
	Sulphuric acid	do	1. 50	. 2895
	Alkaloids and all salts	Kilogram ..	30. 00	5. 7900
	Alum	100 kilos	1. 50	. 2895
	Sulphur	do	. 25	. 0482
	White lead, common	do	1. 00	. 1930
	Carbonate alkaline, caustic alkaline, and salts of ammonia.	do	1. 00	. 1930
	Phosphate of lime	do	1. 30	. 2509
	Phosphate of potassium and sulphate of magnesia.	do	. 50	. 0965
	Sulphate of salt	do	3. 25	. 6272
	Glue and albumina	do	12. 00	2. 3160
	Phosphorus	do	. 35	. 0675
	Nitrate of saltpeter	do	1. 50	. 2895
	Sulphate of ammonia	do	. 25	. 0482
	Oxide of lead	do	2. 00	. 3860
	Sulphate of iron	do	1. 50	. 2895
	Pills, capsules, drops, and all similar	Kilogram ..	2. 00	. 3860
	Drugs not mentioned	do	. 10	. 0193
16	Clocks and watches:			
	Pocket gold watches	Each	7. 50	1. 4475
	Silver and other metals	do	2. 00	. 3860
	Clocks, alarm, with pendulum (common)	do	1. 20	. 2316
	Clocks (for wall or table), finished, with box or without, also chronometers.	do	5. 60	1. 0808
17	Coals:			
	Ordinary stove	1,000 kilos ...	1. 25	. 2413
	Charcoal	do	. 50	. 0965
	Coke	do	1. 25	. 2413
18	Copper:			
	Copper ore		Free	
	Melted and old copper	100 kilos	12. 50	2. 4125
	Copper and brass, in pigs, bars, or old metal	do	22. 50	4. 3425
	Copper, in plates, nails, or copper wire	do	50. 00	9. 6500
	Copper, in tubes, large pieces or small, also pieces prepared for kettle bottoms.	do	70. 00	13. 5100
	Brass wire	do	30. 00	5. 7900
	Copper metallic railing or unworked brass	do	60. 00	11. 5800
	Bronze (unworked)	do	10. 00	1. 9300
	Copper bronze or tin, and all mixtures of metals in which copper is used, and copper hardware which may be polished.	do	125. 00	24. 1250
	Copper and brass metals, and mixtures, in gilded objects, plated or nickel plated.	do	250. 00	48. 2500
19	Cotton:			
	Cotton with or without pulp	do	. 20	. 0386

Tariff on products and manufactures of the United States at Malaga, Spain—Continued.

Number	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States currency.
19	Cotton—Continued.		<i>Pesetas.</i>	
	Spun flax, cotton—			
	Twisted with 1 or 2 threads, while crude or dyed, until No. 35, inclusive.	Kilogram...	1.25	\$0.2413
	From 36 and upwards.	do	1.75	.3377
	Of 3 or more threads, white, crude, or dyed.	do	2.50	.4825
	Woven goods or thick, white or dyed, in pieces, or in handkerchiefs—			
	Until 25 threads, inclusive	do	3.00	.5790
	From 25 threads and upwards	do	2.70	.5211
	Printed, crossed, and woven in frame until 25 threads	do	4.00	.7720
	From 26 threads and upwards	do	3.70	.7141
	Transparent, muslins, linens, organdies, and gauzes of any description.	do	3.00	.5790
	Quilted and union drills.	do	4.50	.8685
	Corderoy, velveteen, and double woven goods	do	3.50	.6755
	Gauzes	do	5.00	.9650
	Lace, excepting crochet lace.	do	6.25	1.2062
	Crochet, woven by hand or frame.	do	3.00	.5790
	Crochet, for stockings, undershirts and drawers	do	2.62	.5056
	Crochet, ready-made, for stockings, mittens, and any other articles not herein mentioned.	do	5.25	1.0132
20	Earthen, stone, and china ware:			
	Clay, stone, and brick tiles for the construction of buildings.	100 kilos	.06	.0158
	Clay, stone, and brick tiles, for pavements; colored tiles, glazed, and water tubes.	do	1.50	.2895
	Earthenware, nicely finished	do	37.50	7.2375
	Porcelain	do	52.50	10.1325
21	Fertilizers:			
	Animal grease	do	1.90	.3667
	Guanos, and all kinds of manure	do	.05	.0096
22	Fish:			
	Fresh fish.	do	1.50	.2895
	Fish in tins	Kilogram	1.00	.0193
	Fish, salted, smoked, or pickled	100 kilos	12.00	2.3160
	Codfish, stock fish, dried and salt	do	23.50	4.5355
	Shell-fish	do	3.00	.5790
23	Flax, hemp, and jute:			
	Hemp and flax, raw and racked.	do	2.00	.3860
	Jute, aloes, and all other vegetable fibers.	do	.20	.0386
	Yarns, hemp and flax.	do	27.50	5.3075
	Jute, aloes, and all other vegetable yarns.	do	7.80	1.5054
	Twisted yarns of 2 or more threads	do	122.50	23.6425
	Manufactured rope	do	20.80	4.0144
	Woven goods—			
	With a cotton mixture, until 10 threads, inclusive.	Kilogram	1.25	.2413
	Hemp and flax, from 11 to 24 threads, inclusive.	do	2.50	.4825
	Hemp and flax, of 25 threads and upwards.	do	4.25	.8202
	Hemp and flax, crossed or worked	do	2.00	.3860
	Laces	do	12.50	2.4125
	Elastic goods.	do	5.00	.9650
	Of jute, aloes, or other vegetable fibers, with or without any cotton mixture.	do	.45	.0868
	In crossed or worked goods, with or without cotton.	do	.90	.1736
24	Fruits:			
	Natural	Kilogram	2.50	.4825
	In sugar	100 kilos	1.00	.1930
	Preserved	do	1.00	.1930
25	Furs:			
	Prepared, but not made up.	do	.64	.1235
	Made up	do	9.00	1.7370
	Kid gloves.	do	32.00	6.1760
26	Glass:			
	Common hollow glass.	100 kilos	8.00	1.5440
	Imitation, gilded inside and outside	do	45.00	8.6850
	Plain glass and crystal	do	17.50	3.3775
	Glass mirrors and all glasses for watches and telescopes.	do	80.00	15.4400
27	Glucose.	do	1.00	.1930
28	Glue.	do	2.00	2.3160
29	Gunpowder of all kinds.	Kilogram	.47	.0907
30	Hair:			
	Goat hair	100 kilos	.50	.0965
	Hogs, horse, and all kinds not mentioned.	do	1.00	.1930

Tariff on products and manufactures of the United States at Malaga, Spain—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States currency.
30	Hair—Continued.		<i>Pesetas.</i>	
	Camels', wild goats' hair.....	100 kilos....	12. 00	\$2. 3160
	Human hair in ornaments and otherwise manufactured.	do.....	10. 00	1. 9300
31	Hay:			
	Of all kinds.....	do.....	. 50	. 0965
32	Hides and skins:			
	Not tanned.....	do.....	6. 00	1. 1580
	Calf-skin, salted or tanned into leather.....	Kilogram.....	5. 00	. 9650
	All other skins, including sole-leather.....	do.....	2. 00	. 3860
33	Honey, all kinds.....	100 kilos....	5. 60	1. 0808
34	Hoops, iron.....	do.....	1. 00	. 1930
35	Ice.....		Free.....	
36	India-rubber:			
	In rough.....	100 kilos....	3. 00	. 5790
	In sheets and tubes.....	Kilogram.....	. 75	. 1447
	All kinds of bands and elastics.....	do.....	. 50	. 0965
	Manufactured—			
	In any objects.....	do.....	1. 85	. 3570
	In ornaments.....	do.....	10. 00	1. 9300
	In woven goods.....	do.....	3. 00	. 5790
	In oil-cloth or floor-cloths.....	100 kilos....	32. 50	6. 2725
	All other classes.....	Kilogram.....	1. 00	. 1930
37	Iron and steel:			
	Cast iron—			
	In pigs or old iron.....	100 kilos....	2. 50	. 4825
	In tubes.....	do.....	4. 70	. 9071
	In ordinary manufacture.....	do.....	7. 50	1. 4475
	In fine manufacture.....	do.....	17. 50	3. 3775
	Wrought iron and steel—			
	For railway bars.....	do.....	8. 00	1. 5440
	Plates, from 6 millimeters in thickness, with bolts.	do.....	9. 00	1. 7370
	Bars of any description, in plates until 6 millimeters; springs for carriages and hoops.	do.....	13. 00	2. 5090
	In large pieces, composed of bars and plates, attached by bolts for building purposes.	do.....	16. 90	3. 2617
	In wire.....	do.....	8. 00	1. 5440
	In nails and bolts, even those with brass heads.	do.....	20. 00	3. 8600
	In tubes.....	do.....	13. 00	2. 5090
	Metallic railing, unmanufactured.....	do.....	16. 00	3. 0880
	Manufactured, of all sorts.....	do.....	24. 00	4. 6320
	Old steel.....	do.....	5. 00	. 9650
38	Jewelry:			
	Gold, with or without stones.....	100 grams....	25. 00	4. 8250
	Silver, with or without stones.....	do.....	3. 50	. 6755
	Precious stones, unmounted.....		Free.....	
39	Lamps:			
	In copper, or mixture with copper.....	100 kilos....	125. 00	24. 1250
	Gilded or plated or nickel plated.....	do.....	250. 00	48. 2500
	Zinc.....	do.....	26. 00	5. 0180
	Zinc gilded.....	do.....	45. 00	8. 6850
	Other metals.....	do.....	37. 50	7. 2375
	Iron.....	do.....	24. 00	4. 6320
	Tin.....	do.....	63. 50	12. 0625
	Gold or silver.....	100 grams....	2. 60	. 5018
	Porcelain.....	100 kilos....	52. 50	10. 1325
	Stone.....	do.....	37. 50	7. 2375
	Glass.....	do.....	45. 00	8. 6850
40	Lead:			
	Pigs, plates, sheets, balls, and shot.....	do.....	1. 60	. 3088
	Manufactured.....	do.....	37. 50	7. 2375
41	Leather;			
	All articles for harness.....	Kilogram.....	7. 75	. 7237
	All objects lined with leather.....	do.....	5. 00	. 9650
42	Lime and cement:			
	Stone or gravel used for building purposes.....	100 kilos....	. 06	. 0158
	Lime.....		Free.....	
43	Malt liquors, all sorts.....	Liter.....	1. 00	. 1930
44	(Medical instruments—pays by the predominating metal of which it is composed.)			
45	Naval stores: Resin, tar, turpentine, and pitch.....	100 kilos....	. 41	. 0791
46	Oil cake and meal.....	1,000 kilos.*	. 50	. 0965
47	Oils:			
	Animal grease.....	100 kilos....	1. 00	. 1930
	Mineral oil.....	do.....	. 41	. 0791

*In Spanish custom-houses the ton is always calculated as 1,000 kilograms.

Tariff on products and manufactures of the United States at Malaga, Spain—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States currency.
47	Oils—Continued.		<i>Pesetas.</i>	
	Vegetable oil, cocoa and palm	100 kilos	1. 00	\$0. 1930
	All others, except olive oil	do	23. 00	4. 4390
	Petroleum, paraffine, and wax, crude oil (natural)	do	8. 75	1. 6887
	Refined and all other rectified mineral oils	do	26. 50	5. 1145
49	Paints:			
	Prepared paints	do	26. 50	5. 1145
	Unprepared in dust or stone	do	7. 50	1. 4475
50	Paper manufactures:			
	Printed wall paper, with gold, silver, or other ornamentation.	do	2. 00	38. 6000
	All others	do	27. 50	5. 3075
	Paper for packing purposes	do	12. 50	2. 4125
	All other kinds not expressed	do	40. 00	7. 7200
	Paper and cartons in sheets or boxes covered with common paper, objects in paste or plaster, or cartons, plaster unfinished.	do	8. 00	1. 5440
	In cartons, objects finished, boxes of cartons	Kilogram ...	1. 50	. 2895
	Printing paper	100 kilos	10. 50	2. 0265
	Writing paper, printed or lithographed	do	30. 00	5. 7900
	Paper cut and lined or cut by hand	do	56. 25	10. 8562
51	(Plated ware pays according to the class of material used in the manufacture.)			
52	Provisions:			
	Salted, dried, and pickled beef	Kilogram ...	. 31	. 0598
	Pork and bacon	100 kilos	15. 00	2. 8950
	All other kinds	do	5. 70	1. 1001
	Lard	do	15. 00	2. 8950
	Butter	do	56. 00	10. 8080
	Cheese	Kilogram ...	. 36	. 0694
53	Quicksilver	100 kilos	1. 60	. 3088
54	Seeds:			
	For growing purposes	do	1. 60	. 3088
	Seeds containing oils	do	. 20	. 0386
	All others not mentioned	do	10. 00	1. 9300
55	Soap:			
	Ordinary	do	18. 00	3. 4740
	Perfumed	Kilogram ...	2. 00	. 3860
56	Spirits:			
	Alcohol, gin, rum, and spirits of low degrees	100 liters	23. 75	4. 5937
57	Starch	100 kilos	10. 00	1. 9300
58	Sugar:			
	Sugar	do	59. 25	11. 4352
	Molasses	do	5. 60	1. 0808
59	Tin:			
	Ordinary	do	20. 00	3. 8600
	Manufactured	do	62. 50	12. 0625
60	Tobacco:			
	In leaf	Kilogram ...	16. 25	3. 1362
	Cigars in boxes	do	15. 00	2. 8950
	Cigars without boxes	do	18. 25	3. 5222
	Cigarettes, boxes	do	14. 00	2. 7020
61	Vegetables:			
	Fresh	100 kilos	1. 25	. 2413
	Dried	do	3. 20	. 6176
62	Wood:			
	Staves	1, 000 pieces ..	2. 00	. 3860
	Common timber for building purposes	Cubic meter ..	2. 70	. 5211
	Fine wood for furniture, in pieces or boards	100 kilos	. 55	. 1061
	Sawed in thin pieces	do	4. 28	. 8260
	Pipe shooks and loose staves	do	10. 00	1. 9300
	Furniture:			
	Common wood	do	20. 00	3. 8600
	Fine wood	do	36. 00	1. 9480
	Fine wood and inlaid of any materials	100 kilos	112. 00	21. 6160
63	Wool:			
	Common—			
	Rough	do	12. 00	2. 3160
	Washed	do	24. 00	4. 6320
	All other kinds and long wool for knitting	do	12. 00	2. 3160
	Washed	do	24. 00	4. 6320
	Racked and carved wool, waste	do	33. 00	6. 3690
	Wool, floor carpets, pure or with mixture of any other material.	do	139. 55	26. 933 ¹
	Cloths, and all other goods in this branch, pure wool, or mixture of any other material.	Kilogram ...	800. 00	1. 5440

Tariff on products and manufactures of the United States at Malaga, Spain—Continued.

Number.	Tariff classification.	Unit.	Rates of duty.	Equivalent in United States currency.
64	Zinc :		<i>Pesetas.</i>	
	Pigs, sheets, or paste	100 kilos....	6. 00	\$1. 1580
	Plates, nails and wire	do	15. 00	2. 8950
	Manufactured objects	do	26. 00	5. 0180
	Manufactured objects, gilded, plated, or nickel plated.	do	45. 00	8. 6850

The full tariff of Spain was printed in Consular Reports No. 26 $\frac{1}{2}$, p. 471. The new consular tariff will be found in No. 70, p. 288.

SWEDEN.

[Prepared by Consul Sidney W. Cooper.]

Number.	Articles.	Tariff rates of duty, Swedish crowns.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
1	Agricultural implements.....		Free		
2	Animals:				
	Cattle.....		Free		
	Hogs.....		Free		
	Horses.....		Free		
	Mules.....		Free		
	Sheep.....		Free		
	All others.....		Free		
3	Art works.....		Free		
4	Bark and extracts not specified.....		Free		
5	Blacking, the weight of boxes or bottles included.....	100 kilos	5. 00	Cwt	\$0 68
6	Bones:				
	All kinds unworked and keys to clefs, and also clo- ven or sawed bones.		Free		
	Worked:				
	Bone-flour.....		Free		
	Ivory and walrus teeth.....	100 kilos.	118. 00	Cwt	16 06
	Other kinds.....	do	35. 00	do	4 76
	Hoofs.....		Free		
	Horn, unworked or rasped.....		Free		
	Worked, shives.....		Free		
	Buttons, varnished or unvarnished, weight of cov- ering included.	100 kilos.	40. 00	Cwt	5 45
	Other kinds.....	do	118. 00	do	16 06
7	Books:				
	Printed in Swedish and bound.....	do	25. 00	do	3 40
	Other kinds not specified, and also such used by blind men.		Free		
	Bound, with clean or lined paper, same duty as for the paper and 20 per cent. added.				
	Maps.....		Free		
	Engravings, not bound, and belonging to printed works.		Free		
	Other kinds.....	100 kilos.	15. 00	Cwt	2 04
	Bound, same duty as for the frame.				
8	Brass:				
	Metals single or compound, not specified, un- worked.		Free		
	Worked plates, latten, &c., and other stuffs for further working.		Free		
	Bolts and nails for building or sheathing of vessels.		Free		
	Other kinds, base tinned, wire gauze, and also more or less gilded, silvered, or galvanized metal works.	100 kilos.	70. 00	Cwt	9 52
	Not gilded, silvered, &c.....	do	35. 00	do	4 76
	Old and broken metals.....		Free		
	Broken works of metal.....		Free		
9	Breadstuffs:				
	Barley.....		Free		
	Bread.....		Free		
	Biscuits, cakes, &c.....	100 kilos.	15. 00	Cwt	2 04
	Indian corn, oats, rye, wheat, and flour.....		Free		
10	Bricks.....				
11	Brooms and brushes:				
	With handles of unpolished or painted wood or iron	100 kilos.	10. 00	Cwt	1 36
	With handles of lacquered or polished wood.....	do	24. 00	do	3 27
	With handles of bone, horn, &c.....	do	47. 00	do	6 40
	Whitewash brushes and painting pencils.....		Free		
12	Candles:				
	Tallow.....	do	7. 00	Cwt	95
	Other kinds.....	do	12. 00	do	1 63
13	Carriages and horse-cars:				
	With two wheel and sledges.....	Piece	15. 00	Piece	4 02
	Small phaetons.....	do	25. 00	do	6 70

Sweden—Continued.

Number.	Articles.	Tariff rates of duty, Swedish crowns.		Equivalent. in United States money.	
		Unit.	Duty.	Unit.	Duty.
13	Carriages and horse-cars—Continued.				
	Half-covered, less	Piece	50. 00	Piece	\$13 40
	Other kinds	do	100. 00	do	26 80
	Horse-cars	do	5. 00	do	1 34
14	Cars, railroad	do	5. 00	do	1 34
15	Chemicals, not specified, 5 per cent. ad valorem				
16	Clocks and watches:				
	Chronometer and ship clocks	do	1. 00	do	. 268
	Wall and table clocks, with covering of bronze, other metal, or of alabaster, and porcelain.	100 kilos	70. 00	Cwt	9 52
	With covering of wood, or other kinds	do	47. 00	do	6 40
	Watches with capsule of gold	Piece	1. 00	Piece	. 266 $\frac{4}{10}$
	With capsule of other metal	do	. 50	do	. 13 $\frac{2}{10}$
	Clock or watch works or parts thereof, not specified.	100 kilos	100. 00	Cwt	13 60
17	Coal		Free		
18	Copper:				
	Raw and refined		Free		
	Ore		Free		
	Ingots, bar		Free		
	Sheets, plates, &c., for further working		Free		
	Bolts and nails for building or sheathing of vessels		Free		
	Other works of copper:				
	Unpolished	100 kilos	35. 00	Cwt	4 76
	Polished	do	70. 00	do	9 52
	Copper wire, gilded, silvered, &c.	do	235. 00	do	31 99
	Other kinds		Free		
19	Cotton:				
	Dyed or undyed		Free		
	Manufactures:				
	Band and strings of cotton	100 kilos	110. 00	Cwt	14 97
	Blond laces	do	235. 00	do	31 99
	Thread	do	40. 00		5 44
	Webs: machine-felt, round woven, for use in manufactories		Free		
	Sail-cloth	100 kilos	14. 00	Cwt	1 90
	Bookbinder cloth pasted and pressed or dyed	do	50. 00	do	6 80
	Plush, felt, and parcum	do	90. 00	do	12 25
	Tyll	do	250. 00	do	34 04
	Other quite or partly thin webs, as gauze, &c.	do	175. 00	do	23 82
	Close webs, two handled, which all over or partly on an area of 1 square centimeter, contain 80 threads or more in warp and woof together.	do	175. 00	do	23 82
	Other kinds, unbleached, undyed, or not printed.	do	50. 00	do	6 80
	Bleached or dyed	do	90. 00	do	12 25
	Printed or pressed	do	110. 00	do	14 97
	Tricot and stockings	do	118. 00	do	16 06
	Yarn, undyed	do	15. 00	do	2 04
	Yarn, dyed or printed	do	30. 00	do	4 08
20	Earthen, stone, and china ware:				
	Earthenware and worked terralith, terra-cotta, not specified.	do	7. 00	do	95
	Stone, not specified, unworked		Free		
	Stone, polished	100 kilos	3. 00	Cwt	41
	Stone, other kinds, china ware, not genuine, white or one colored but not painted.	do	10. 00	do	1 36
	Painted or printed	do	16. 00	do	2 17
	Chinaware, genuine, white or one colored	do	24. 00	do	3 27
	Gilded, galvanized or painted	do	47. 00	do	6 40
21	Fertilizers, all kinds, not specified	do	Free		
22	Fish:				
	Anchovies and sardals in oil or brine in hermetic boxes, (weight of boxes included).	do	20. 00	do	2 72
	Other kinds of conserves, (weight of boxes included)	do	30. 00	do	4 08
	All other kinds of fish, fresh, dry or salted	do	Free		
23	Flax, hemp, and jute:				
	Cordage, all kinds	do	Free		
	Sail-cloth, all kinds	do	19. 00	do	2 59
	Webs of flax and hemp or any vegetable stuff not specified, mixed or not with cotton or jute:				
	(a) Smooth, two-handled, and such diapered webs which whole surface is homogeneous (not woven in patterns) and on an area of 1 square centimeter contain highest 25 threads together in warp and woof.	do	19. 00	do	2 59

Sweden—Continued.

Number.	Articles.	Tariff rates of duty, Swedish crowns.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
29	Gunpowder	100 kilos.	12. 00	Cwt	\$1 64
30	Hair:				
	Horse-hair	do	20. 00	do	2 72
	Other kinds, not specified		Free		
	Webs:				
	Felt of cattle-hair		Free		
	Other kinds	100 kilos.	60. 00	Cwt	8 16
	Manufactures of hair and horse-hair, with or without setting and locks.	do	80. 00	do	10 88
	Wigmaker works	do	120. 00	do	16 32
31	Hay		Free		
32	Hides and skins:				
	Undressed		Free		
	Dressed:				
	Leather and tanned hides and skins and chamois.	100 kilos.	24. 00	Cwt	3 27
	Other kinds not named under "Furs"	do	47. 00	do	6 40
33	Honey	do	10. 00	do	1 36
34	Hops	do	10. 00	do	1 36
35	Ice		Free		
36	India-rubber:				
	Vulcanized or not, unworked, and also gutta-percha unworked.		Free		
	Rolled in shives of a thickness of 1 millimeter or more, with or without woof.		Free		
	Worked: rolled shives of less than 1 millimeter in thickness, without woof.	do	100. 00	Cwt	13 60
	With woof	do	175. 00	do	23 82
	Pipes, buffers, &c., set in peel of wood	do	100. 00	do	13 60
	Shoes, boots, &c., and other kinds not specified and not considered as machinery or tools, or parts thereof.	do	100. 00	do	13 60
	Machinery and tools, or parts thereof, not specified.		Free		
37	Iron and steel:				
	Pig-iron, bar-iron, and blooms		Free		
	Rails, with thereto belonging, sharfs, bolts, shrews, nuts, nails, &c.		Free		
	Other rolled or hammered bars, &c.; nuts, screws, and rivets not belonging to rails, of 12 millimeters and more in diameter.		Free		
	Rolled or hammered plates, with or without cover of zinc, tin, or lead, and not more worked as being bent and holed.		Free		
	Plates of 3 millimeters in thickness or more, less or more worked, and other stuffs for further working.		Free		
	Anchors, grapplings, cables, and chains, on which the link has a diameter or more.		Free		
	Chain-stoppers, crooks, and knees		Free		
	Chains with the link less in diameter than of 6 millimeter.	100 kilos.	10 00	Cwt	1 36
	Nails in length of 45 millimeters or more	do	3. 00	do	41
	Nails less in length than 45 millimeters, and small nails, &c.	do	15. 00	do	2 04
	Iron pegs	do	7. 00	do	95
	Buttons	do	15. 00	do	2 04
	Melted beams, piers, lamp-posts, palisades, monuments, grates, and weights, &c.	do	1. 00	do	13
	Chimneys, ovens, &c., and melted, not enameled, glaciated, or tinned, pots, pans, mortars, and cribs.	do	2. 00	do	27
	Tables, sofas, seats, foot-scrapers, spitting-boxes, lamp-posts, pressing and box iron, and other melted articles not specified, being enameled, glaciated, or tinned.	do	8. 00	do	1 09
	Copy-presses, stretchers, coffee and chopping mills, and other machinery used in household.	do	15. 00	do	2 04
	Finer melted goods, not specified, as fruit-baskets, lamps, candle-sticks, &c., and not considered as being toys and trinkets.	do	25. 00	do	3 40
	Money-boxes and bedsteads, 10 per cent. ad valorem.				
	Other iron and steel ware not considered as machinery, and tools, gilded or silvered.	do	70. 00	do	9 52
	Nickeled, polished or lacquered	do	35. 00	do	4 76
	Other kinds	do	15. 00	do	2 04
	Iron and steel wire		Free		

Sweden—Continued.

Number.	Articles.	Tariff rates of duty, Swedish crowns.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
37	Iron and steel—Continued.				
	Machinery and tools		Free		
	Knives, razors	100 kilos.	59. 00	Cwt	\$8 03
	Pen-knives	do	118. 00	do	16 06
	Case-knives and other coarse knives	do	14. 00	do	1 90
	Table knives, forks, and other kinds, not speci- fied, with handles of silver or gilded, plated, or of ivory.	do	118. 00	do	16 06
	With handles of other stuff	do	24. 00	do	3 27
	Scissors, shears, and such considered as tools		Free		
	Other kinds, unpolished	100 kilos.	24. 00	Cwt	3 27
	Other kinds, polished	do	59. 00	do	8 06
38	Jewelry:				
	Jewels, unset		Free		
	Jewels, set in gold	100 kilos.	1, 170. 00	Cwt	159 29
	Gold:				
	Unworked		Free		
	Worked with or without jewels	100 kilos.	1, 170. 00	Cwt	159 29
	Leaf-gold and thread	do	235. 00	do	31 99
	Silver:				
	Unworked		Free		
	Worked	100 kilos.	700. 00	Cwt	95 20
	Leaf silver	do	140. 00	do	19 06
	Silver thread	do	235. 00	do	31 99
39	Lamps (same duty as the material of which being prin- cipally manufactured).				
40	Lead:				
	Unworked		Free		
	Worked, not specified: plates		Free		
	Worked unpainted and unlacquered	100 kilos.	7. 00	Cwt	95
	Painted and lacquered	do	35. 00	do	4 76
	Black lead	do	Free		
	Pencils, all kinds	do	35. 00	do	4 76
	Sugar of lead ore		Free		
41	Leather:				
	Sole leather and tanned hides and skins	100 kilos.	24. 00	do	3 27
	Other kinds	do	47. 00	do	6 40
	Manufactures not specified pay the same duty as the material of which being manufactured, and 20 per cent. added.				
	Straps of leather to machines		Free		
	Shoes, not specified, of silk, or mixed	do	235. 00	do	31 99
	Of felt or sail cloth with or without soles of leather	do	80. 00	do	10 89
	Of morocco, cordovan or dyed, pressed, or lacquered skins.	do	140. 00	do	19 06
	Coarse boots and sea boots		Free		
	Boot with soles of wood		Free		
	Other kinds	do	94. 00	do	12 79
42	Lime and cement		Free		
43	Malt liquors:				
	Porter in casks	do	7. 00	do	95
	Porter in bottles, &c	100 liters	12. 00	100 liters	3 21
	Other kinds in casks	100 kilos.	5. 00	Cwt	68
	Other kinds in bottles	100 liters	8. 00	100 liters	2 14
44	Medical instruments		Free		
45	Naval stores:				
	Resin		Free		
	Tar		Free		
	Pitch		Free		
	Turpentine, native		Free		
	Turpentine oil and spirit	100 kilos.	7. 00	Cwt	95
46	Oil cakes and meal		Free		
47	Oils:				
	Animal		Free		
	Mineral:				
	Petroleum, &c	100 kilos.	2. 00	Cwt	27
	Unrectified		Free		
	Vegetable:				
	Greasy, not volatile:				
	Flax and rape oil	do	7. 00	do	95
	Other kinds in casks	do	2. 00	do	27
	Other kinds in other vessels	do	5. 00	do	68
	Varnish	100 liters	25. 00	100 liters	3 30
	Volatile oils:				
	Æther and essences	do	140. 00	do	37 52
	Other kinds, not specified, weight of bottles, flasks, &c., included.	do	1. 00	do	13 60

Sweden—Continued.

Number.	Articles.	Tariff rates of duty, Swedish crowns.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
48	Paraffine and wax :				
	Paraffine :				
	Unrefined		Free		
	Refined, 5 per cent. ad valorem.....				
	Wax :				
	All kinds		Free		
	Manufactures, 10 per cent. ad valorem.....				
49	Paints :				
	White lead and zinc, &c.....	100 kilos	5. 00	Cwt	\$0 68
	Indigo, extract of indigo, carmine, and cochineal.....	do	20. 00	do	2 72
	Pine soot	do	5. 00	do	68
	Paints prepared with oil.....	do	5. 00	do	68
	Other kinds, prepared or unprepared, not specified.....		Free		
	Logwood, Brazil-wood, &c.....		Free		
	Small color-boxes with colors, weight of box included.....	do	80. 00	do	10 89
50	Paper :				
	Sheathing, &c.....		Free		
	Polishing and emery		Free		
	Cartouch and maculature, and other coarse, not used for writing and printing.....	do	2. 00	do	27
	Gilded, silvered, glazed, &c., and paper jointed with web.....	do	20. 00	do	2 72
	Other kinds, also lined	do	10. 00	do	1 36
	Manufactures: envelopes and paper purses.....	do	20. 00	do	2 72
	Hanging paper.....	do	13. 00	do	1 77
	Pasteboard and manufactures thereof, not specified, unlacquered.....	do	35. 00	do	4 76
	Gilded, lacquered or bronzed.....	do	60. 00	do	8 16
51	Plated ware. (See Brass.)				
52	Provisions :				
	Meat, fresh or salt.....		Free		
	Oleomargarine.....		Free		
	Lard		Free		
	Butter		Free		
	Cheese	do	7. 00	do	95
53	Quicksilver	do	35. 00	do	4 76
54	Seeds :				
	Canary	do	10. 00	do	1 36
	Other kinds not specified.....		Free	do	
55	Soaps :				
	Soft soap	do	5. 00	do	68
	Hard soap, perfumed.....	do	28. 00	do	3 80
	Other kinds	do	10. 00	do	1 36
56	Spirits :				
	Brandy and spirit of corn or potatoes, in casks, larger or less, reduced to a strength of 50 per cent. of alcohol by 15 degrees of heat Celsius, or 59 degrees of heat Fahrenheit.....	100 liters	60. 00	100 liters	16 08
	Arrack, reduced to the same strength by the same degrees of heat.....	do	60. 00	do	16 08
	Rum, reduced to the same strength by the same degrees of heat.....	do	60. 00	do	16 08
	Cognac :				
	Produced of grapes in France and direct imported by way of water, reduced to the same strength by the same degrees of heat.....	do	45. 00	do	12 06
	If produced in another country or otherwise imported, reduced to a strength as aforesaid.....	do	60. 00	do	16 08
	Produced of other fruits, reduced to a strength of 50 per cent. of alcohol by 15 degrees of heat Celsius resp., 59 degrees Fahrenheit.....	do	60. 00	do	16 08
	Imported in other vessels, as bottles, &c., without respect to strength of alcohol.....	do	90. 00	do	24 12
	If less parties as 250 liters are imported, 15 öre per liter will be added to the tariff rates above given.....				
	Liquors of spirit with sugar	do	120. 00	do	32 16
	Cologne water, weight of flasks included	100 kilos	100. 00	Cwt	13 60
57	Starch	do	10. 00	do	1 36
58	Sugar :				
	Refined, all kinds	do	33. 00	do	4 49
	Unrefined, not darker, as No. 18 of the Dutch standard.....	do	33. 00	do	4 49
	Darker, as No. 18 of the Dutch standard.....	do	23. 50	do	3 20
	Molasses	do	23. 50	do	3 20

Sweden—Continued.

Number.	Articles.	Tariff rates of duty, Swedish crowns.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
59	Tin:				
	Unworked		Free		
	Worked, not specified, gilded, silvered, or lacquered.	100 kilos.	70.00	Cwt	\$9 5
	Other kinds	do	35.00	do	4 7
60	Tobacco:				
	Unworked, leaf and stalk	do	100.00	do	13 60
	Worked:				
	Cigars and cigarettes	do	300.00	do	40 84
	Other kinds	do	120.00	do	16 33
61	Vegetables:				
	Not specified, potatoes, beans, &c.				
	Fresh, other kinds	do	10.00	do	1 36
	Prepared in brandy or vinegar	do	30.00	do	4 08
	Prepared in sugar	do	47.00	do	6 40
	Dry and salted	do	25.00	do	3 40
62	Wood:				
	Unworked		Free		
	Worked:				
	Stakes, beams, spars, deals, and battens, juniper, staves.		Free		
	Gun-stock stuffs, handspikes, laths, moldings, box stuff, sawed, masts, bowsprits, spars, and pump-barrels, all kinds.		Free		
	Staves, all kinds, not complete worked, and ribs.		Free		
	Hoops, wood, all kinds, and oar stuff.		Free		
	Fanér shives and planed box stuff, of 7 millimeters in thickness and less, pay half the duty which is stipulated for joinery of the same wood.				
	Keys of ebony	do	Free		
	Turnery ware and sculptures.	do	59.00	do	8.03
	(If the weight exceeds 1 kilogram per piece the surplus in weight will pay the same duty as is stipulated for joinery.)				
	Cooper works:				
	Of fir or pine	do	1.00	do	54
	Of other kinds	do	4.00	do	31
	Other more or less worked goods, joinery included, not stained, lacquered, or painted, of fir or pine.	do	2.00	do	27
	Painted or lacquered, &c.	do	4.00	do	54
	Of elm, ash, birch, beech, oak, and other native wood, not specified, massive or not.	do	8.00	do	1.09
	Of pear, walnut, mahogany, or other foreign wood, massive or not, and also gilded works.	do	15.00	do	2.04
	Furniture:				
	Darned, but without covering, pay duty as stipulated above and 20 per cent. added.				
	Darned, and with covering, pay the same duty as stipulated above and 40 per cent. added.				
63	Wool:				
	Dyed or undyed		Free		
	Wools of wool or mixed with cotton, flax, &c. (silk excepted):				
	Machine felt to use in manufactories		Free		
	Felts and carpets	do	60.00	do	8.16
	Press cloth	do	20.00	do	2.72
	Other kinds	do	175.00	do	23.82
	Mixed with silk	do	235.00	do	31.99
	Yarn, undyed and unbleached	do	20.00	do	2.72
	Yarn, dyed or bleached	do	35.00	do	4.76
64	Zinc:				
	Unworked		Free		
	Worked:				
	Plates and nails for sheathing of vessels		Free		
	Gilded or silvered	do	70.00	do	9.52
	Not painted or varnished	do	7.00	do	.95
	Other kinds	do	35.00	do	4.76

The full tariff of Sweden was printed in Consular Reports No. 5, p. 472.

SWITZERLAND.

Swiss customs duties.

[Prepared by Consul-General Boyd Winchester.]

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
1	Agricultural implements, harrows, plows, &c., 6 per cent. ad valorem.			
2	Animals:			
	Cattle:		<i>Francs.</i>	
	Over 150 kilos* weight.....	Head	5.00	\$0.965
	From 60 to 150 kilos weight	do	2.00	.386
	Calves, under 60 kilos weight.....	do	1.00	.193
	Hogs:			
	25 kilos weight or over	do	2.00	.386
	Under 25 kilos weight	do	1.00	.193
	Horses.....	do	3.00	.579
	Colts.....	do	1.00	.193
	Mules	do	3.00	.579
	Asses	do	1.00	.193
	Sheep and goats	do	.50	.096
	All others		Free	
3	Art works:			
	Books printed, maps	Quintal †..	1.00	.193
	Engravings of all kinds, without frames	do	1.00	.193
	Musical instruments.....	do	16.00	3.088
	Parts of musical instruments.....	do	16.00	3.088
	Physical, optical, and astronomical instruments.....	do	16.00	3.088
	Statuary works:			
	All kinds	do	16.00	3.088
	Zinc	do	5.00	.965
	Cast iron.....	do	2.00	.366
	Oil paintings on glass.....	do	30.00	5.79
4	Bark and extracts:			
	Bark for tanning purposes	do	.02	.00386
	Bark for apothecary purposes.....	do	3.00	.579
5	Blacking	do	7.00	1.351
6	Bones, hoof, horns, &c.:			
	Horns:			
	Rough	do	.30	.0570
	Manufactured	do	.60	.1158
	Bones: Ivory, morse-tooth, and others, rough.....	do	10.00	1.93
	Whalebone:			
	Rough	do	4.00	.772
	Polished	do	16.00	3.088
	Turtle-shell and pearl mother, rough	do	10.00	1.93
	Pearls and corals, not mounted	do	50.00	9.65
	Turtle-shell and pearl mother, manufactured	do	100.00	19.30
7	Books. (See No. 3, Art works.)			
8	Brass, and manufactures of:			
	Brass:			
	Hammered.....	do	3.00	.579
	Rolled	do	3.00	.579
	Drawn.....	do	3.00	.579
	In bars	do	1.00	.193
	In blocks	do	1.00	.193
	In plates.....	do	1.00	.193
	In poles.....	do	3.00	.579
	In sheets.....	do	3.00	.579
	Wire.....	do	3.00	.579
	Pipes	do	3.00	.579
	Articles.....	do	16.00	3.088
	Articles, unfinished	do	10.00	1.93
	Texture	do	7.00	1.35
9	Breadstuffs:			
	Barley, Indian corn, oats, rye.....	do	.30	.0579
	Wheat:			
	Not shelled or split	do	.30	.0579
	Shelled and split	do	1.25	.241
	Flour, all kinds	do	1.25	.241
	Bread.....	do	1.25	.241
	Biscuits, without sugar.....	do	10.00	1.93

* Kilogram = 2 pounds.

† Quintal = 110 pounds.

Swiss customs duties—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
10	Bricks:		<i>Francs.</i>	
	Common and glazed	Quintal	1.50	\$0.2895
	Not burnt	do	.10	.0193
11	Brooms and brushes:			
	Brooms of rice-straw	do	1.50	.2895
	brushes	do	2.00	.386
12	Candles:			
	Tallow	do	4.00	.772
	All other kinds	do	16.00	3.088
13	Carriages and horse-cars:			
	Carriages and sleds, 10 per cent. ad valorem			
	Horse-cars, 8 per cent. ad valorem.			
	Parts of wagons, carriages, sleds of all kinds are duti- able according to material and nature.			
14	Cars:			
	Railroad cars, 8 per cent. ad valorem.			
	Locomotives	do	4.00	.772
15	Chemicals:			
	Alum, arsenic acid, baryta, bone-black, chloride of potassium, chloride of lime, chloride of mag- nesium, chrome alum, iron maceration, lith- arge, vegetable acid, lime, extract of chestnut fluid, sulphuric magnesium, soda, sublimed sulphur, hydro-chlorate, sulphuric acid, ar- gillaceous earth, vitriol (iron, copper, zinc) water glass.	do	.30	.0579
	Caustic potash, caustic soda, aniline, arsenious acid, benzoate, bitter-almond oil, lead sugar, oxide of lead, nitrate of lead, borax, carbonate acid, cashew, chlore-zinc, gallic acid, tannic acid, glucine, verdigris, pyroxylix spirit, potash, oxalic acid, naphthaline, natron salt, oleate, salicylic acid, crude, salammoniac, spirits of salammoniac, saltpeter, saltpeter acid, salt of wood sorrel, sulphuric ether, sulphuric ar- senic, stearine, argillaceous earth of soda, Turkish red oil, zinc dust, tin salt.	do	1.00	.193
	Starch, crude and roasted	do	.60	.1158
	Pyrotechnical preparations	do	50.00	9.65
	Dynamite	do	40.00	7.72
	Matches	do	20.00	3.86
	German tinder	do	5.00	.965
	Wagon-grease	do	2.00	.386
	Colors:			
	Mineral and vegetable, crude	do	.20	.0386
	Ground in powder	do	.60	.1158
	Anotto orchilla, prepared; zaffer cochineal; indigo, &c.	do	4.00	.772
	Extracts of colors:			
	Alizarine; artificial alizarine, dry or in paste	do	3.00	.579
	Other extracts of colors, fluid or fast	do	7.00	1.35
	Pine soot, red lead	do	1.00	.193
	White lead, zinc white	do	3.00	.579
	Chrome yellow, chrome greens	do	3.50	.675
	Mineral blue, paris blue; colors prepared from coal tar.	do	7.00	1.35
	Colors in boxes, &c	do	16.00	3.088
	Varnish of all kinds	do	7.00	1.35
	Raw materials, vegetable and animal, for apothecary purposes, as berries, leaves, blossoms, fruits, &c.	do	3.00	.579
	Drugs from plant juice	do	10.00	1.93
	Mineral water, natural and artificial	do	3.00	.579
	Pharmaceutic preparations	do	40.00	7.72
	Arcanum and specialties for medical use	do	100.00	19.30
	Sirup for medical use	do	30.00	5.79
	Perfumeries	do	30.00	5.79
	Wash sponges	do	20.00	3.86
16	Clocks and watches:			
	Clocks:			
	Common, not faced in gold frames	do	16.00	3.088
	Other kinds than above mentioned	do	30.00	5.79
	Watches of all kinds	do	30.00	5.79
	Watch materials	do	16.00	3.088
	Musical boxes and clocks	do	30.00	5.79
17	Coal:			
	Brown coal	do	.02	.0038
	Wood coal	do	Free	.....
	Pit coal	do	.02	.0038

Swiss customs duties—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
18	Copper:		<i>Francs.</i>	
	Pure hammered, rolled, in bars, sheets, pipes, and wire.	Quintal	3.00	\$0.579
	Brass wares, bronze wares	do	16.00	3.088
	Bolts, nails, screws	do	10.00	1.93
	Smith wares	do	16.00	3.088
	Gilded or silver-plated, hammered, rolled	do	16.00	3.088
	Ore	do	Free	
	Pure old-bell metal, cannon metal	do	1.00	.193
19	Cotton:			
	Raw	do	.30	.0579
	Wadding	do	4.00	.772
	Yarns:			
	Single, raw	do	6.00	1.158
	Twisted, bleached	do	8.00	1.544
	Twisted, colored	do	11.00	2.123
	Bobbinet, coiled or in small skeins, for retail	do	20.00	3.86
	Cloth, unbleached	do	8.00	1.544
	Net lace	do	4.00	.772
	Net lace with 38 threads to 5 millimeters	do	8.00	1.544
	Cloth of yarn:			
	No. 70 English or finer	do	14.00	2.70
	Over 38 threads to 5 millimeters	do	14.00	2.70
	Cloth, bleached, colored, printed	do	25.00	4.825
	Velvet, colored, stitched, net lace	do	30.00	5.79
	Covers, common:			
	Not sewed	do	4.00	.772
	With sewing work	do	30.00	5.79
	Laces, and lace-maker works	do	16.00	3.088
	Hosiery	do	25.00	4.825
	Embroidery and laces	do	60.00	11.58
20	Earthen, stone, and china ware:			
	Earthen ware:			
	Not burnt, tiles, bricks, pipes, plates	do	.10	.0193
	Fire-proof bricks	do	.60	11.58
	Glazed tiles, bricks	do	1.50	.289
	Glazed pipes, plates, &c., not painted	do	2.00	.386
	Potter work:			
	Glazed or not	do	2.00	.386
	Glazed, ground, painted	do	16.00	3.088
	China and other fine ware	do	16.00	3.088
21	Fertilizers:			
	Guano:			
	Open	do	.20	.0386
	Not open	do	Free	
	Manures	do	Free	
	Salt, open	do	.20	.0386
	Not open	do	Free	
	Other kinds	do	Free	
22	Fish:			
	Fresh	do	2.50	.482
	Dried, salted, smoked, pickled, in barrels:			
	Under 5 kilos weight	do	16.00	3.088
	Over 5 kilos weight	do	2.00	.386
23	Flax, hemp, and jute:			
	Flax, hemp, jute:			
	Raw and broken	do	.30	.0579
	Yarn:			
	Up to No. 10 raw	do	.60	.1158
	Over No. 10 raw	do	4.00	.772
	Twisted	do	7.00	1.35
	Colored	do	15.00	2.895
	Bobbed or in balls	do	24.00	4.632
	Packing cloth:			
	25 threads to 3 centimeters	do	1.50	.289
	With more than 25 and not over 40 warp threads	do	4.00	.772
	With more than 40 warp threads	do	16.00	3.088
	Texture, net lace, plain or stitched, raw, bleached colored, printed	do	16.00	3.088
	Lace and lace-maker works	do	16.00	3.088
	Hosiery	do	16.00	3.088
	Embroidery and laces	do	30.00	5.79
	Rope-maker works:			
	Untwisted raw threads and cords	do	5.00	.965
	Ropes	do	3.00	.579
	Other rope-maker works, as packing threads, cords, twisted, bleached, colored, nets.	do	16.00	3.088
	Girths	do	15.00	2.895
	Hose, seamless bags	do	15.00	2.895
	Rough mats	do	7.00	1.35
	Oil cloths for packing	do	4.00	.772
	Wax cloths for furniture	do	16.00	3.088

Swiss customs duties—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
24	Fruits:		<i>Francs.</i>	
	Eatable berries, fresh	Quintal	3.00	\$0.579
	Grapes, fresh	do	2.50	.482
	Chestnuts, fresh or dried	do	.30	.579
	Dried, with stones	do	1.50	.289
	Juice, without sugar and alcohol	do	20.00	3.86
	Grapes and currants	do	3.00	.579
	Others	do	3.00	.579
25	Furs:			
	Cloths and other finished wear, sewed	do	100.00	19.30
26	Glass:			
	Roofing, tiles, floor plates	do	7.00	1.35
	Window:			
	Ordinary	do	7.00	1.35
	Dim, glazed	do	25.00	4.825
	Colored	do	16.00	3.088
	Ware, globes for watch manufacture	do	1.50	.289
	Poles	do	1.50	.289
	Ordinary, colored for bottles	do	1.50	.289
	Half green	do	5.00	.965
	Ordinary colorless, not polished	do	8.00	1.544
	Dim, painted, gilded glass wares of all kinds	do	30.00	5.79
	Polished, colored, engraved	do	16.00	3.088
	Flux, enamel, pearls	do	4.00	.772
	Looking:			
	Not silvered, each kind	do	16.00	3.038
	Silvered, under 18 square decimeters, measured with frame	do	16.00	3.088
	Over 18 square decimeters, measured with frame	do	30.00	5.79
27	Glucose, or grape sugar	do	7.50	1.447
28	Glue:			
	Raw	do	.60	.1158
	Purified and fish glue	do	7.00	1.35
29	Gunpowder	do		
30	Hair:			
	Animal, not specially enumerated	do	.60	.1158
	Bristles	do	2.00	.386
	Horse and buffalo:			
	Uncleaned	do	1.00	.193
	Cleaned	do	7.00	1.35
	Human	do	50.00	9.65
	Animal's, for mats, horse blankets	do	10.00	1.93
	Horse, for manufacture	do	16.00	3.088
31	Hay	do	Free	
32	Hides and skins:			
	Raw, uncured	do	.60	[.1158]
	Tanned, prepared	do	8.00	1.544
33	Honey	do	8.00	1.544
34	Hops	do	4.00	.772
35	Ice	do	Free	
36	India-rubber:			
	Webbings	do	30.00	5.79
	Shoes:			
	Without sewing	do	16.00	3.088
	With sewing	do	30.00	5.79
	Webbings, mixed with cotton, wool, silk	do	30.00	5.79
	Pure or mixed, in balls	do	4.00	.772
	In hose and pipes	do	7.00	1.35
37	Iron and steel:			
	NOTE.—Steel and malleable cast iron same tariff as iron.			
	Iron:			
	Ore	do	Free	
	Cast iron in bars, loops	do	.10	.0193
	Hammered, rolled, bar	do	1.70	.328
	Rails, poles (round, square, flat), sheets, not enumerated hereafter	do	.60	.1158
	Rails, weighing less than 15 kilos per meter	do	1.70	.328
	Pattern, not more than 6 millimeters in diameter	do	1.70	.328
	Round, under 7½ centimeters in diameter	do	1.70	.328
	Wire, in rings, raw, over 5 millimeters and under 11 millimeters in diameter	do	1.30	.25
	Sheet, thinner than 3 millimeters, coated with lead, zinc, copper	do	3.00	.579
	Wire, not more than 9 millimeters thick, raw, coated with lead, tin, zinc, copper	do	4.00	.772
	NOTE.—Tin plates same tariff as sheet-iron of 25 centimeters breadth.			
	Articles of cast-iron:			
	Common, rough	do	2.50	.482
	Others	do	5.00	.965

Swiss customs duties—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
37	Iron and steel—Continued.		<i>Francs.</i>	
	Articles of malleable cast-iron, steel.....	Quintal...	.60	\$0.1158
	Tin wire, pipes, rough.....	do	.60	.1158
	Tools, rough, unfinished, as:			
	Plowshares, axles, anvils, pipes, switch-frames, crossings (frogs).....	do	3.00	.578
	Others common, raw, polished, coated with ground color.....	do	7.00	1.35
	Fine, polished, painted, varnished, enameled	do	20.00	3.86
	Cutlery.....	do	40.00	7.72
	Arms of all kinds	do	50.00	9.65
	Arms, unfinished	do	10.00	1.93
38	Jewelry, gold and silver, real or mock	do	30.00	5.79
39	Lamps			
40	Lead:			
	Ore.....	do	Free	
	In bars, blocks, pigs, plates.....	do	.30	.0579
	Sheets, pipes, wire, balls, shot, old printing letters	do	1.50	.289
	Articles:			
	Raw, new printing letters.....	do	7.00	1.35
	Polished, painted, varnished.....	do	16.00	3.088
41	Leather:			
	Of all kinds.....	do	8.00	1.544
	Articles (except shoes) finished.....	do	30.00	5.79
	Articles (except shoes) unfinished.....	do	30.00	5.79
	Shoes of all kinds.....	do	30.00	5.79
	Shoe materials.....	do	30.00	5.79
	Gloves.....	do	30.00	5.79
42	Lime and cement:			
	Lime:			
	Chloride, citrate, sulphate.....	do	.30	.0579
	Hydraulic	do	.20	.0386
	Fat and plaster paris.....	do	.10	.0193
	Cement:			
	Roman	do	.50	.0965
	Portland.....	do	.70	.135
	Works of, as bricks, tiles, pipes:			
	Rough, not burnt.....	do	.15	.0289
	Colored, polished	do	1.50	.289
43	Malt liquors:			
	Malt	do	1.20	.2316
	Extract and beer:			
	In barrels.....	do	3.50	.675
	In bottles.....	do	10.00	1.93
	Yeast.....	do	3.00	.579
44	Naval stores:			
	Rosin:			
	Earth of all kinds.....	do	.30	.0579
	Other, raw.....	do	.20	.0386
	Purified	do	1.50	.289
	Tar	do	.20	.0386
	Turpentine and pitch.....	do	.10	.0386
45	Oil-cake and meal	do	Free	
47	Oils:			
	Ethereal, in wholesale packing.....	do	40.00	7.72
	Bitter almond, artificial	do	1.00	.193
	Brown coal-tar oil.....	do	.30	.0579
	Mineral and tar.....	do	1.25	.241
	Olive, in barrels.....	do	1.00	.193
	Sweet, in bottles.....	do	12.00	2.316
	Others not for medical use.....	do	1.00	.193
48	Paraffine and wax:			
	Wax	do	1.50	.289
	Of plants.....	do	1.00	.193
	Works of all kinds.....	do	16.00	3.088
	Paraffine.....	do	1.00	.193
49	Paints. (See 15, Chemicals.)			
50	Paper:			
	Pulp:			
	Wet.....	do	.60	.1158
	Dried	do	1.50	.289
	Packing, printing, blotting.....	do	3.00	.579
	Glass, rust, emery.....	do	2.50	.675
	Writing, printing, glued and unglued, silk paper, single color.....	do	7.00	1.35
	More than one color, gold and silver paper, hanging-paper.....	do	16.00	3.088
	Labels, lithograph, tickets, &c.....	do	30.00	5.79

Swiss customs duties—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
50	Paper—Continued.			
	Pasteboard:		<i>Francs.</i>	
	Common grey.....	Quintal	3. 00	\$0. 579
	White	do	4. 00	. 772
	Covered with paper.....	do	10. 00	1. 93
	Book-binder works, play-cards.....	do	80. 00	15. 48
51	Plated ware.....	do		
52	Provisions:			
	Meat:			
	Fresh.....	do	2. 00	. 386
	Salted, smoked	do	4. 00	. 776
	Lard.....	do	1. 50	. 289
	Butter.....	do	3. 00	. 579
	Cheese	do	4. 00	. 772
53	Quicksilver	do	3. 00	. 579
54	Seeds:			
	Oil	do	. 30	. 0579
	For pharmaceutical purpose and others.....	do	3. 00	. 579
55	Soap:			
	All kinds.....	do		
	Ordinary.....	do	1. 50	. 289
	Perfumed.....	do	1. 50	. 289
56	Spirits:			
	Alcohol, liquor, and spirit-beverages in barrels, for each degree of pure alcohol.....	do	. 20	. 0386
	Pure in bottles.....	do	16. 00	3. 088
57	Starch	do	. 60	. 1158
	Not enumerated	do	2. 00	. 386
58	Sugar:			
	Refined, remains.....	do	8. 50	1. 64
	Powder.....	do	10. 00	1. 93
	Cut.....	do	10. 00	1. 93
	In blocks.....	do	8. 50	1. 64
	Crystal.....	do	7. 50	1. 447
	Malt.....	do	7. 50	1. 447
	Molasses, not pure.....	do	2. 00	. 386
	Raw	do	7. 50	1. 447
	Sirup:			
	Refined.....	do	7. 00	1. 35
	Not refined	do	2. 00	. 386
	Grape	do	7. 50	1. 447
59	Tin:			
	Bars, blocks, plates.....	do	1. 50	. 289
	Pure, hammered, rolled.....	do	3. 00	. 579
	Ware:			
	Rough.....	do	7. 00	1. 35
	Polished.....	do	16. 00	3. 088
60	Tobacco:			
	Leaf, stems, carrot, unmanufactured	do	25. 00	4. 825
	Snuff.....	do	35. 00	6. 755
	Smoking and chewing.....	do	50. 00	9. 65
	Cigars and cigarettes.....	do	100. 00	19. 30
61	Vegetables:			
	Potatoes.....	do	Free	
	Others, salted or dried, open.....	do	4. 00	. 772
	Preserved.....	do	7. 00	1. 35
	Spices of all kinds	do	15. 00	2. 80
	Coffee			
	Green	do	3. 50	. 675
	Burnt	do	4. 50	. 868
	Soup	do	20. 00	3. 86
62	Wood:			
	Fire.....	do	Free	
	Lumber:			
	Rough, or hewed with ax.....	do	. 05	. 0096
	Sawed and shingles.....	do	. 40	. 077
	Hewed ready for building.....	do	. 60	. 1158
	Ebony:			
	Rough.....	do	. 10	. 0193
	Sawed.....	do	. 50	. 0965
	Inlaid	do	4. 00	. 772
	Cork:			
	Rough.....	do	1. 00	. 193
	Manufactured	do	1. 00	. 193
	For packing purposes	do	. 50	. 0965
	Articles:			
	Unfinished.....	do	2. 00	. 386
	Finished, of common wood.....	do	4. 00	. 772

Swiss customs duties—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
62	Wood—Continued.		<i>Francs.</i>	
	Cooper works, with iron or brass joiner articles.....	Quintal...	15.00	\$2.89
	Joiner articles, furniture, common.....	do	16.00	3.088
	Polished, upholstered	do	16.00	3.088
	Frames, gilded	do	30.00	5.79
	Ware and turned articles, painted and polished.....	do	16.00	3.088
	Rods for baskets, peeled and not peeled.....	do	.05	.0096
	Fine baskets.....	do	16.00	3.088
	Rough baskets.....	do	8.00	1.544
	Rough baskets of unpeeled rods	do	2.00	.386
63	Wool:			
	Raw.....	do	.30	.0579
	Washed colored.....	do	.60	.1158
	Yarn:			
	Raw, single or double.....	do	5.00	.965
	Bleached, three times or more twisted.....	do	8.00	1.544
	Colored.....	do	9.00	1.737
	Bobbinet, (according to nature).....	do		
	Cloth ends.....	do	4.00	.772
	Webbings:			
	Raw	do	12.00	2.316
	Bleached colored, printed.....	do	25.00	4.825
	Blankets of all kinds:			
	Not sewed	do	30.00	5.79
	Sewed.....	do	16.00	3.088
	Laces.....	do	30.00	5.79
	Lace-maker goods	do	25.00	4.825
	Hosiery	do	25.00	4.825
	Embroidery.....	do	30.00	5.79
	Shawls	do	30.00	5.79
	Carpets:			
	Ordinary, not sewed.....	do	12.00	2.316
	Others	do	30.00	5.79
	Shoes from cloth ends.....	do	16.00	3.088
	Felt stuffs.....	do	16.00	3.088
	Felt articles:			
	Not finished, raw.....	do	7.00	1.35
	Colored, printed.....	do	16.00	3.088
	Felt hats.....	do	30.00	5.79
	Felt hats, unfinished.....	do	7.00	1.35
64	Zinc:			
	Bars, blocks, plates.....	do	.40	.0772
	Rolled, drawn, tin, wire	do	1.50	.289
	Wares:			
	Rough.....	do	7.00	1.35
	Polished, painted, varnished.....	do	16.00	3.088

The full tariff of Switzerland was printed in Consular Reports No. 46, p. 303.

TURKEY.

Provisional and new tariffs of Turkey.

[Prepared by Consul-General Heap.]

Number.	Articles.	New tariff.*			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
1	Agricultural implements: All coarse wares in wrought or cast-iron, steel, or sheet-iron used in combination with wood, but neither polished nor finely varnished. Carts, trucks, wheelbarrows, and vehicles for agricultural purposes, in rough wood, &c.	100 kilos ..	<i>Piasters.</i> 55. 00	220 pounds	\$2. 42
		do	25. 00	do	1. 10
2	Animals: Bulls and buffaloes	Head	104. 00	Head	4. 576
	Cows and buffalo cows, young bullocks, steers, heifers, and buffalo heifers.	do	55. 00	do	2. 42
	Calves weighing over 60 kilos	do	10. 00	do	44. 00
	Hogs	do	25. 00	do	1. 10
	Horses, stallions, mares, geldings, colts	do	200. 00	do	8. 80
	Mules	do	60. 00	do	2. 64
	Oxen	do	80. 00	do	3. 52
	Sheep	do	7. 00	do	. 308
	All others not specified	do	5. 00	do	. 22
3	Art works: Engravings, lithographs, and colored prints, photographs. Engraved plates on metal or wood, stereotype plates. Lithographic stones, covered with designs or engravings. Paintings and drawings by hand	100 kilos ..	150. 00	220 pounds	6. 60
	Statues, busts, figures of animals: Stone	do	240. 00	do	10. 56
	Metal	do	30. 00	do	1. 32
	Weighing over 5 kilos (10 pounds) each	1 kilo	20. 00	2. 2 pounds	. 88
		100 kilos ..	150. 00	220 pounds	6. 60
		do	250. 00	do	11. 00
4	Barks and extracts: Woods and barks used in tanning: Ground	do	4. 00	do	. 176
	Not ground	do	3. 00	do	. 132
	Galls, valonia, dividivi, sumach, and other tannins.	do	12. 00	do	. 528
	Catechu	do	25. 00	do	1. 10
	Other extracts of tannin	do	22. 00	do	. 968
5	Blacking, including receptacles	do	20. 00	do	. 88
6	Bones, hoofs, and horns, &c	do	20. 00	do	. 88
7	Books, maps, engravings, &c.: Printed matter in any language, maps, and printed music, even bound in books (exempt). Engravings	do	150. 00	do	6. 60
8	Brass, and manufacture of: Hammered and rolled, in bars, sheets or wire	do	61. 00	do	2. 684
	Ingots and scrap	do	32. 00	do	1. 408
	Machinery of which the principal material is composed of.	do	96. 00	do	4. 224
	Common unvarnished wares in brass-work, in sheet-brass, &c.	do	1. 80	do	6. 92
	Other brass ware, even when combined with other materials.	do	2. 70	do	11. 88
9	Breadstuffs: Barley	do	4. 55	do	. 187
	Bread	do	12. 00	do	. 528
	Biscuits, ship	do	25. 00	do	1. 10
	Indian corn	do	4. 25	do	. 187

* Provisional tariff, 8 per cent. ad valorem.

Provisional and new tariffs of Turkey- Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
9	Breadstuffs—Continued.		<i>Piasters.</i>		
	Oats.....	100 kilos..	4.25	220 pounds	\$0.187
	Rye.....	do	4.25	do	.187
	Wheat.....	do	6.30	do	.2772
	Flour, wheaten.....	do	16.00	do	.704
	Flour, oaten, barley, maize, and others not specified.	do	11.00	do	.404
10	Bricks:				
	Bath-bricks.....	do	4.00	do	.176
	Fire-bricks of all kinds.....	do	3.20	do	.1408
	Glazed.....	do	4.00	do	.176
	Tubular, unglazed.....	do	1.60	do	.704
	Unglazed.....	do	1.00	220 pounds	.44
11	Brooms and brushes:				
	Ordinary, combined with wood or iron, without polish or varnish.	do	48.00	do	2.112
	In pigs' bristles.....	do	168.00	do	7.392
	Fine brooms.....	do	300.00	do	13.20
12	Candles:				
	Stearine, paraffine, kerosene.....	do	112.00	do	4.928
	Tallow.....	do	60.00	do	.264
	Wax and spermaceti.....	do	150.00	do	6.60
13	Carriages and horse-cars:				
	Covered carriages with springs, padded, such as omnibuses, landaus, and broughams.	Each	18.75	Each	82.50
	Others, such as phaetons, gigs, &c.....	do	12.00	do	52.80
	NOTE.—Carriages falling under these two heads which are imported unfinished, <i>i. e.</i> neither painted, varnished, nor padded, pay 20 per cent. less.				
	Vans and wagons on springs.....	do	3.75	do	16.50
	Tram (horse) cars.....	do	9.60	do	42.24
14	Cars (railroad, steam):				
	Padded, such as carriages of first and second classes.	do	50.00	do	220.
	Not padded, such as carriages of third class.....	do	3,500.00	do	154.00
	Goods-trucks and baggage vans covered.....	do	1,500.00	do	66.00
	Goods-trucks and baggage-vans open.....	do	1,100.00	do	48.40
15	Chemicals:				
	Alum:				
	Crude.....	100 kilos..	6.00	220 pounds	.264
	Refined and calcined.....	do	24.00	do	1.056
	Bicarbonate of soda.....	do	12.00	do	.528
	Carbonate of soda, crude, refined or crystallized.	do	5.00	do	.22
	Calcined soda and carbonate of potassium.....	do	7.00	do	.308
	Caustic soda and potassa, dry or liquid.....	do	10.00	do	.44
	Chloride of lime or of potassium and other bleaching salts.	do	6.00	do	.264
	Citric acid.....	do	200.00	do	8.80
	Common salt (rock salt and sea salt) (prohibited).				
	Copperas:				
	Blue—sulphate of copper.....	do	16.00	do	.704
	Green—sulphate of iron.....	do	4.00	do	.176
	White—sulphate of zinc.....	do	16.00	do	.704
	Cream of tartar.....	do	100.00	do	4.40
	Liquid ammonia.....	do	20.00	do	.88
	Muriatic or hydrochloric acid.....	do	5.00	do	.22
	Nitric acid.....	do	20.00	do	.88
	Phenic acid, liquid.....	do	16.00	do	.704
	Sal ammoniac.....	do	36.00	do	1.584
	Saltpeter (nitrate of potassium) (prohibited)				
	Silicate of potash or liquid soda.....	do	12.00	do	.528
	Sulphate and other salts of quinine and morphine.	Per kilo ..	95.00	2½ pounds	4.18
	Sulphate of soda and of magnesia.....	100 kilos..	4.00	220 pounds	.176
	Sulphuric acid.....	do	6.00	do	.264
	Tartaric acid.....	do	144.00	do	6.336
	All other salts, acids, and oxides not otherwise specified.	do	45.00	do	1.98
	Sulphur in lumps, rolls, or ground flowers of sulphur.	do	5.00	do	.22
	Phosphorus.....	do	320.00	do	14.08

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
16	Clocks and watches:		<i>Piasters.</i>		
	Clocks of all kinds, pedestal or hanging	100 kilos ..	270. 00	220 pounds	\$11. 88
	Clock-works, put together or in pieces, complete or incomplete.	do	450. 00	do	19. 88
	Watches:				
	Gold.....	Each	15. 00	Each.....	. 66
	Silver	do	5. 00	do	. 22
	Watch-works, put together or in pieces, complete or incomplete.	Per kilo ..	80. 00	2½ pounds	3. 52
17	Coal:				
	Coal.....	do	. 84	do	. 369
	Charcoal	do	2. 80	do	. 1232
	Coke.....	do	1. 60	do	. 704
	Lignites and other mineral fuel.....	do	. 55	do	. 242
	Peat and turf	do	. 45	do	. 198
18	Copper:				
	Ore	do	8. 00	do	. 352
	Ingots.....	do	50. 00	do	. 220
	Bars and sheets.....	do	62. 00	do	2. 728
19	Cotton:				
	Cotton, raw, carded, dyed or bleached	do	40. 00	do	1. 76
	Clothing	do	600. 00	do	26. 40
	Curtains, with embroideries.....	do	1, 000. 00	do	44. 00
	Fabrics:				
	Unbleached, such as T-cloths, drills, shirtings, &c.	do	125. 00	do	5. 50
	Bleached, such as Tanfibs (<i>siva spoors</i>), of all qualities.	do	100. 00	do	4. 40
	Bleached, such as mulls, &c	do	225. 00	do	9. 90
	Dyed or printed, such as gauze, tulle, tartans, &c.	do	550. 00	do	24. 20
	Woven, or dyed, or printed yarns	do	216. 00	do	9. 504
	Combined with india-rubber thread.....	do	825. 00	do	36. 30
	Plain or figured, such as linings, cretonne, damasks, plain cloths, calicos.	do	275. 00	do	12. 50
	Gauze, tulle, victoria lawn.....	do	375. 00	do	16. 50
	Embroidery, hand or machine made, or with application, such as curtains, bands, insertions, &c.	do	1, 000. 00	do	44. 00
	Hosiery:				
	Hosiery, combined with india-rubber threads	do	240. 00	do	10. 56
	Lace:				
	Mixtures, cotton and wool, former predominating in weight.	do	825. 00	do	36. 30
	Seed	do	1, 700. 00	do	74. 80
	Threads:				
	Covered with real gold or silver	do	120. 00	do	5. 28
	Covered with imitation gold or silver.....	do	8. 00	do	. 352
	Trimings and button ware, covered with cotton	Per kilo ..	15. 00	do	. 66
	Twist:				
	Bleached	do	8. 00	do	. 352
	Unbleached	100 kilos..	84. 00	do	3. 696
	Red of all qualities.....	do	75. 00	do	3. 30
	Other colors.....	do	116. 00	do	5. 104
	Wadding.....	do	97. 00	do	4. 268
	Yarns or twists, single:				
	Of any number, adapted for retail trade, i. e., done up in balls or skeins, on reels or cards, &c., bleached, unbleached, or colored, or wooden reels, reels included.	do	8. 00	do	. 352
	All others	do	128. 00	do	5. 632
	Yarns, single:				
	Unbleached	do	200. 00	do	8. 80
	Bleached	do	68. 00	do	2. 992
	Red, of all qualities	do	76. 00	do	3. 344
	Other colors.....	do	105. 00	do	4. 62
20	Earthen, stone, and china ware:				
	Earthenware:				
	Stoves and parts of stoves, decorative tiles for wall facings or pavements:				
	In one color only	do	30. 00	do	1. 32
	In two or more colors, gilded, silvered, or painted.	do	60. 00	do	2. 64
	Pots, brown-ware, and other coarse pottery	do	12. 00	do	. 528

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
20	Earthen, stone, and china ware—Continued.				
	Earthenware—Continued.		<i>Piasters.</i>		
	Bricks and paving tiles, unglazed.....	100 kilos ..	1. 00	220 lbs....	\$0 .44
	Tubular bricks, and roofing tiles of all kinds, unglazed.	do	1. 60	do	.704
	Bricks and paving and roofing tiles, glazed, and bath-bricks.	do	4. 00	do	.176
	Fire bricks of all kinds.....	do	3. 20	do	.1408
	Piping and tubing.....	do	2. 80	do	.1232
	Clay pipes and bowls.....	do	45. 00	do	1. 98
	Crucibles.....	do	24. 00	do	1. 56
	Stoneware:				
	Counters and marbles.....	do	37. 50	do	1. 65
	Lithographic stones, unpolished.....	do	8. 00	do	.352
	Coarse, unpolished objects, in cement or stone, stone-cutters' work, such as door and window jambs, pillars and portions of pillars, conduits and tubes, troughs and ornamented building-stonework.	do	15. 00	do	.66
	Tablets of slate, in wooden frames.....	do	15. 00	do	.66
	Touchstones, grindstones, and whetstones, of all kinds, not combined with other substances.	do	22. 00	do	.968
	Slabs and tablets of slate, white or colored, marble or other stone, polished.	do	12. 00	do	.528
	Slabs of unpolished marbles, of less than 16 centimeters in thickness.	do	1. 50	do	.066
	Slabs of Malta stone, of less than 16 centimeters in thickness.	do	7. 00	do	.308
	Millstones, iron-bound or otherwise.....	do	150. 00	do	6. 60
	Fine stone work, such as carved chimney-pieces, statues, busts, figures of animals, and ornamental articles, paper-weights, candle-sticks, bowls, ink-stands, table or bracket ornaments, as well as objects of stone combined with metal and other substances.	do			
	Chinaware:				
	Table services:				
	One color only.....	do	30. 00	do	1. 32
	Two or more colors, gilded, silvered or painted.	do	60. 00	do	2. 64
	White.....	do	90. 00	do	3. 96
	Colored, painted, or gilt.....	do	150. 00	do	6. 60
	China goods combined with other substances.	do	150. 00	do	6. 60
21	Fertilizers:				
	Guanos.....	do	10. 00	do	.44
	Other fertilizers.....	do	5. 00	do	.22
22	Fish:				
	Fresh, alive, or dead.....	do	60. 00	do	2. 64
	Salted herrings.....	do	25. 00	do	1. 10
	Sardines, in barrels.....	do	65. 00	do	2. 86
	Other salt fish, in barrels.....	do	45. 00	do	1. 98
	Sturgeons and sterlet, dried or smoked, and the edible sinew.	do	300. 00	do	13. 20
	Stock-fish, and other dried fish.....	do	30. 00	do	1. 32
	Other smoked fish.....	do	65. 00	do	2. 86
	Bottargo (dried fish-roes).....	do	600. 00	do	26. 40
	Caviar:				
	Black.....	do	400. 00	do	17. 60
	Red (tarama).....	do	24. 00	do	1. 056
	Red (dil).....	do	30. 00	do	1. 32
	Oysters:				
	Fresh.....	do	60. 00	do	2. 64
	Pickled.....	do	225. 00	do	9. 90
	Mussels, edible snails, and other shell-fish.....	do	100. 00	do	4. 40
	Lobsters, and other crustacea.....	do	150. 00	do	6. 60
	Turtles, alive or dead.....	do	180. 00	do	7. 92
	All provisions, hermetically closed, whether in bottles, jars, or tin boxes, &c., excepting pickles in bottles.	do	120. 00	do	5. 28

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
23	Flax, hemp, jute :		<i>Piasters.</i>		
	Flax, hemp, jute, albacea (Manila hemp), cocoanut fiber, and all other filaments except cotton.	100 kilos ..	20. 00	220 pounds	\$0. 88
	Coarse coverlets and carpets of jute, Manila hemp, cocoanut and similar fibers.	do	90. 00	do	3. 96
	Coarse jute yarns	do	25. 00	do	1. 10
	Other flax, hempen, and jute yarns	do	40. 00	do	1. 76
	Single flax, hempen, and jute yarns, boiled or bleached.	do	72. 00	do	3. 168
	Twist flax, hempen, and jute yarns :				
	Unbleached	do	72. 00	do	3. 168
	Boiled or dyed	do	120. 00	do	5. 28
	Ropers' work :				
	Cables, ropes, twines	do	36. 00	do	1. 584
	Hunting, fishing, and other nets of hemp, &c.	do	200. 00	do	8. 80
	All other roper's work, such as girths, hose, buckets, &c.	do	72. 00	do	3. 168
	Hempen and linen fabrics :				
	Cambric, lawn, handkerchiefs, of close materials, gauze, and tulle.	do	1, 200. 00	do	52. 80
	Grey packing cloth, striped or plain, and sacks.	do	40. 00	do	1. 76
	Lace of linen thread	do	1, 700. 00	do	74. 80
	Flaxen, hempen, and other vegetable substances (cotton excepted), embroidered or with application.	do	1, 200. 00	do	52. 80
	Plain cloth ticking and drills :				
	Unbleached	do	250. 00	do	11. 00
	Bleached, dyed, or printed; duck and other materials for clothing or upholstery, even dyed, printed, or woven with colored threads; damasks and twills of all kinds; handkerchiefs, table linen, and towels, finished or unfinished; ribbons and woven borderings.	do	400. 00	do	17. 60
	Sail and tent cloth	do	72. 00	do	3. 168
	Hosiery, of all kinds	do	60. 00	do	26. 40
	Trimmings, even with metal threads, such as fringes, borderings, bells and curtain ropes, twills, chenilles, trimmings, and button ware, partially made of wood, horn, glass, india-rubber, &c., covered with linen hemp, &c. (excepting cotton).	do	800. 00	do	16. 72
	Linen underclothing	do	525. 00	do	23. 10
	Articles of mens', women's, and childrens' wearing apparel and made-up goods, not specified.	do	600. 00	do	26. 40
	Fabrics in linen combined with india-rubber threads, such as elastic sides of boots, &c.	do	625. 00	do	27. 50
	Hosiery combined with india-rubber threads	do	900. 00	do	39. 60
24	Fruits :				
	Fresh grapes, oranges, citrons, green olives	do	18. 75	do	. 825
	Apples, pears, and other fresh fruits, not specified	do	37. 50	do	1. 65
	Figs	do	30. 00	do	1. 32
	Almonds and pistachios	do	90. 00	do	3. 96
	Walnuts, filberts, pumpkin seeds	do	22. 50	do	. 902
	Carobs (dried pod of <i>Ceratonia siliqua</i>)	do	9. 00	do	. 396
	Raisins, dates, and other dried fruits, not specified	do	45. 00	do	1. 98
25	Furs :				
	Prepared, cured, bleached, or dyed skins, viz :				
	Astrachan lamb-skins, white, black, and gray	do	900. 00	do	39. 60
	Angora and other goat skins; all other lamb and sheep skins.	do	80. 00	do	3. 52
	Other skins, raw, cured or dyed, whole or in pieces, sewed together, but not made up into articles of wearing apparel, viz :				
	Cat, wild and domestic	do	450. 00	do	19. 80
	Fox	do	400. 00	do	17. 60
	Hare, rabbit, and polecat	do	250. 00	do	11. 00

Prorisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
25	Furs—Continued.				
	Other skins, raw, cured, or dyed—Continued.		<i>Piasters.</i>		
	Lynx.....	100 kilos ..	700. 00	220 pounds	\$30. 80
	Lynx (sesser)	do	500. 00	do	22. 00
	Sable, ermine, chinchilla, and blue fox	do	3, 000. 00	do	132. 00
	Sable, marten	do	1, 000. 00	do	44. 00
	Weasel, marten, minever, and common squirrel.	do	1, 800. 00	do	79. 20
	Wolf, tiger, bear, lion, panther	do	250. 00	do	11. 00
	Not specified	do	700. 00	do	30. 80
	Sheep-skin overcoats, completed, but not covered with cloth.	do	300. 00	do	13. 20
	Trimmings, caps, cuffs, and other fur goods, &c.	do	1, 250. 00	do	55. 00
26	Glass:				
	Block, broken, and pulverized	do	2. 100	do	. 86
	Common, holloware, natural color, even if pressed or splintered, such as demi-johns, bottles, &c.	do	1. 200	do	. 528
	Crystals and glassware:				
	Polished, frosted, or cut, but not colored	do	105. 00	do	4. 62
	Colored, painted, or gilt, even if polished, pressed or cut.	do	150. 00	do	6. 60
	Of all kinds, in combination with other substances, such as lamps, lusters, chandeliers, leather covered goods in glass, artificial flowers, &c.	do	180. 00	do	7. 92
	Holloware, white or clouded, smooth or pressed, but neither polished, &c., such as decanters, drinking vessels, lamp globes, &c.	do	52. 50	do	2. 31
	Lamp chimneys	do	18. 00	do	. 792
	Mirrors and plate glass:				
	Unpolished, cast even in relief	do	18. 00	do	. 792
	Polished or silvered, even if beveled or bent.	do	108. 00	do	4. 752
	Pendants for lusters, glass buttons, &c., vitrifications.	do	132. 00	do	5. 808
	Tiles	do	18. 00	do	. 792
	Window glass, white or semi-white:				
	Single or double	do	18. 00	do	. 792
	Colored, fluted, or stained	do	60. 00	do	2. 64
	Trimmings combined with glass	do	380. 00	do	16. 72
27	Glucose	do	12. 00	do	. 528
28	Glue	do	12. 00	do	. 528
29	Gunpowder (prohibited).				
30	Hair:				
	Angora and other goats' hair, camels' hair, viz:				
	Combed or carded	do	80. 00	do	3. 52
	Dyed	do	100. 00	do	4. 40
	Raw, washed or unwashed	do	36. 00	do	1. 584
	Animals' hair (wool excepted), not specified	do	36. 00	do	1. 584
	Cow hair, and other coarse hairs of all kinds.	do	64. 00	do	2. 816
	Horse hair	do	200. 00	do	8. 80
	Human hair	do	2, 400. 00	do	105. 60
	Manufactured hair (barbers' work)	Per kilo ..	75. 00	2. 2 lbs.	3. 30
31	Hay, and other dried fodder	100 kilos ..	2. 50	220 lbs	. 11
32	Hides and skins:				
	Hides, raw, fresh, or salted, with or without hair.	do	40. 00	do	1. 76
	Skins: Skins of sheep, goats, &c.	do	450. 00	do	19. 80
33	Honey	do	60. 00	do	2. 64
34	Hops	do	110. 00	do	4. 84
35	Ice	do	1. 00	do	. 044
36	India-rubber:				
	Dissolved or liquid	do	200. 00	do	8. 80
	Gutta-percha	do	200. 00	do	8. 80
	Hardened, in sheets, bars, or pipes	do	240. 00	do	10. 56
	In the mass, raw or refined	do	160. 00	do	7. 04
	Manufactures:				
	Caoutchouc threads	do	480. 00	do	21. 12
	Covered with silk threads	do	800. 00	do	35. 20
	Covered with cotton, woolen, linen, hempen threads.	do	600. 00	do	26. 40

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
36	India-rubber—Continued.				
	Manufactures—Continued.		<i>Piasters.</i>		
	Common articles in india-rubber.....	100 kilos ..	750. 00	220 lbs	\$33. 00
	Fabrics in cotton, linen, &c., combined with india-rubber.....	do	825. 00	do	36. 30
	Hosiery in cotton, linen, &c., with india-rubber threads.....	do	900. 00	do	39. 60
37	Iron and steel:				
	Iron ores.....	do	. 80	do	. 0352
	Unwrought, old iron and steel scraps, filings, and shavings.....	do	2. 50	do	. 11
	Cast iron, of all kinds	do	2. 50	do	. 11
	Pigs, and blooms	do	4. 80	do	. 2112
	Steel, raw, cast, filled, or bar	do	12. 00	do	. 528
	Partially wrought:				
	Iron bars, round or four-sided, nail-rods, angle iron E, T, I, iron, &c., and iron wire.....	do	7. 60	do	. 3344
	Iron or steel rails	do	7. 60	do	. 3344
	Iron wire, coated with copper, tin, zinc, or lead.....	do	10. 00	do	. 44
	Steel wire	do	20. 00	do	. 88
	Iron for plowshares, plate or sheet iron, iron hoops, and flat bars for hooping.....	do	10. 00	do	. 44
	Plate or sheet steel:				
	Wrought.....	do	16. 00	do	. 704
	Polished.....	do	24. 00	do	1. 056
	Sheet and plate steel and iron, varnished or coated with copper, zinc, lead, or nickel.....	do	16. 00	do	. 704
	Very coarse wrought or cast iron work:				
	Anchors and chain cables	do	16. 00	do	. 704
	Wire cables	do	24. 00	do	1. 056
	Pipes and tubes	do	24. 00	do	1. 056
	Very coarse articles in cast iron	do	12. 00	do	. 528
	Coarse iron and steel wares:				
	Wire and other nails, wire tacks	do	11. 00	do	. 484
	Files, in straw, screws, ribs and mountings of umbrellas.....	do	36. 00	do	1. 584
	Telegraph cables	do	32. 00	do	1. 408
	Safes	do	90. 00	do	3. 96
	Bedsteads	do	30. 00	do	1. 32
	Kitchen utensils, enameled.....	do	120. 00	do	5. 28
	All coarse wares in wrought or cast iron, steel, sheet iron, iron and steel wire, not specified.....	do	55. 00	do	2. 42
	Fine iron and steel ware:				
	Fine cutlery, not silver plated nor gilt, even made up with tortoise shell, ivory, mother-of-pearl, &c.....	do	325. 00	do	14. 30
	Knitting needles and hairpins.....	do	45. 00	do	1. 98
	Common metal pins	do	150. 00	do	6. 60
	Crotchet, sewing, packing, and sailmakers' needles, thimbles, buttons, and stay-busts.....	do	200. 00	do	8. 80
	Wire gauze.....	do	85. 00	do	3. 74
	Steel pens, beads, ornaments of apparel, hand and house bells, clock and watch springs, &c.....	do	3. 40	do	14. 96
38	Jewelry:				
	Articles in pure gold, platinum, or silver, combined with diamonds, pearls, coral, or other fine or precious stones.....	Per kilo ..	200. 00	2. 3 lbs	8. 80
	Articles in coral	do	200. 00	do	8. 80
	Coral unmounted	do	50. 00	do	2. 20
	Precious stones:				
	Diamonds, emeralds, opals, rubies, sapphires.....	Gram	30. 00	15. 432 grs ..	1. 32
	Topaz, turquoise, and others not named	do	2. 00	do	. 88
	Pearls unmounted	do	3. 00	do	. 132
39	Lamps, crystal or glass	100 kilos ..	180. 00	220 lbs	7. 92
40	Lead:				
	Ore	do	8. 00	do	. 352
	Pig, bar, and scrap lead	do	10. 50	do	. 462
	In sheets and lead wire.....	do	18. 00	do	. 792

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
40	Lead—Continued. Manufactures:		<i>Piasters.</i>		
	Printing type	100 kilos ..	130.00	220 lbs	\$5.72
	Common lead ware, not polished or varnished.	do	.20	do	.88
	Fine or varnished wares	do	135.00	do	5.94
	Fine wares, even in combination with iron or wood, neither polished nor varnished.	do	67.00	do	2.948
41	Leather:				
	Sole and similar tanned, but uncurried leather ..	do	140.00	do	6.16
	Curried	do	190.00	do	8.36
	Calf	do	270.00	do	11.88
	Varnished or japanned	do	500.00	do	22.00
	Imitation sole leather	do	20.00	do	.88
	Manufactures:				
	Articles in morocco leather, Brussels or Denmark skins, chamois or tanned skins, tinted or japanned leathers or in parchment, viz:				
	Gloves	do	4,125.00	do	181.50
	Boots and shoes ..	do	1,050.00	do	46.20
	Fancy articles, instrument and other small cases, tailors' measures, traveling bags, nargileh tubes, small boxes, &c.	do	750.00	do	33.00
	Trunks	do	165.00	do	7.26
	Tents	do	240.00	do	10.56
	Shoemakers', saddlers', harness and trunk makers' work, and in general all articles in tanned, simply reddened or blacked leather.	do	562.00	do	24.728
42	Lime and cement:				
	Lime, unburnt, quick, burnt, or slaked; hydraulic lime.	100 kilos ..	1.00	220 lbs	.044
	Gypsum, unburnt, burnt, or plaster of Paris ..	do	2.00	do	.088
	Cement, raw, burnt, or ground; and marble powder.	do	2.50	do	.11
	Unworked chalk and other earths	do	1.00	do	.044
43	Malt liquors:				
	Beer:				
	In bottles	do	40.00	do	1.76
	In casks	do	28.00	do	1.232
44	Medical instruments	do	320.00	do	14.08
45	Naval stores:				
	Rosin	do	8.00	do	.352
	Tar	do	8.00	do	.352
	Turpentine and pitch	do	8.00	do	.352
46	Oil cake and meal	do		do	
47	Oils:				
	Animal	100 kilos ..	32.00	220 lbs	1.408
	Mineral	do	17.00	do	.748
	Vegetable	do	32.00	do	1.408
48	Paraffine and wax:				
	Paraffine	do	72.00	do	3.168
	Wax	do	120.00	do	5.28
49	Paints:				
	White lead, red lead, litharge, and zinc white ..	do	18.00	do	.792
	Oil paints, &c., for trade use, in vessels or tin boxes.	do	36.00	do	1.584
	Fine colors for artists' use, Chinese ink, and boxes of colors, &c.	do	80.00	do	3.52
50	Paper:				
	Straw paper	do	8.50	do	.374
	Packing, blotting, and filtering papers	do	16.60	do	.704
	Slate paper	do	72.00	do	3.168
	Fly and medicated paper	do	80.00	do	3.52
	Printing and colored paper for placards	do	22.00	do	.968
	Tissue paper in sheets	do	180.00	do	7.92
	Tissue paper in sheets, tinted	do	48.00	do	2.112
	Note and letter, plain or ruled	do	36.00	do	1.584
	Drawing paper, card-board	do	56.00	do	2.464
	Lithographed or printed for account books, &c., printed forms of accounts, tickets, &c.	do	120.00	do	5.28

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.*			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
50	Paper—Continued.		<i>Piasters.</i>		
	Cigarette paper in sheets	100 kilos ..	160. 00	220 lbs.	\$7. 04
	Wall paper	do	90. 00	do	3. 96
	Gilt, silvered, watered, and Morocco papers	do	108. 00	do	4. 752
	Parchment paper	do	88. 00	do	3. 872
	Board made in imitation of leather	do	38. 00	do	1. 672
	Other card-boards	do	16. 00	do	. 704
	Other tinted or colored papers	do	66. 00	do	2. 904
	Manufactures:				
	Board for roofing (roofing felt)	do	12. 00	do	. 528
	Envelopes and note-books	do	66. 00	do	2. 994
	Account and other office books and letter copy books	do	108. 00	do	4. 752
	Cigarette papers bound in small books	do	200. 00	do	8. 80
	Playing-cards	do	460. 00	do	20. 24
	Piping and tubing in asphalted card-board	do	48. 00	do	2. 112
	All articles in paper, card-board, papier-maché, stationery, pasteboard, and other similar boards, not specially mentioned.	do	160. 00	do	7. 04
51	Plated ware: Articles wholly or partially composed of common metals, gilt, or silver plated, or varnished in imitation of gold or silver.	Per kilo ..	6. 63	Per 2. 2 lbs	. 2904
52	Provisions:				
	Meats:				
	Fresh	100 kilos ..	50. 00	220 lbs.	2. 20
	Salt	do	50. 00	do	2. 20
	Dead poultry and game	do	150. 00	do	6. 60
	Hams, sausages, ox tongues, and preserved meats, hermetically closed.	do	150. 00	do	6. 60
	Bacon and other dried and smoked meats	do	120. 00	do	5. 28
	Extracts of meat	do	750. 00	do	33. 00
	Siberian and artificial butter	do	90. 00	do	3. 96
	Lard and goose grease	do	90. 00	do	3. 96
	Butter, fresh and salt	do	150. 00	do	6. 60
	Cheese:				
	Inferior qualities	do	60. 00	do	2. 64
	Superior qualities	do	160. 00	do	7. 04
53	Quicksilver	do	160. 00	do	7. 04
54	Seeds: Linseed, colza, rape, henna, poppy, cotton, and alpist seeds, and all grains and seeds not otherwise specified.	do	8. 00	do	. 352
55	Soap:				
	Green, black, and other soft soaps	do	30. 00	do	1. 32
	Common unscented hard soaps	do	40. 00	do	1. 76
	Scented and unscented toilet soaps, in tablets, balls, or boxes.	do	87. 00	do	3. 828
56	Spirits:				
	Alcohol in casks	do	40. 00	do	1. 76
	Cognac, rum, arrack, brandies, and other sweetened or highly flavored spirits, in casks.	do	100. 00	do	4. 40
	(NOTE.—All spirits above 75° Tralles, as well as alcohol, are liable, in addition, to excise duty.)				
	Same as above, in bottles	do	150. 00	do	6. 60
57	Starch, fecula, and starch-powder	do	36. 00	do	1. 584
58	Sugar and molasses:				
	Sugar:				
	Refined, in the loaf, whole or broken, cut in tubes or tablets, coarsely or finely powdered; sugar candy,	do	60. 00	do	2. 64
	Brown sugar	do	48. 00	do	2. 112
	Sirup of sugar; granulated fruit or starch sugar.	do	21. 00	do	. 924
	Molasses; liquid fruit sugar	do	9. 00	do	. 396
59	Tin:				
	Ore	do	16. 00	do	. 704
	In ingots and bars	do	92. 00	do	4. 048
	Scrap and waste	do	80. 00	do	3. 52
	Partially manufactured tin: In slabs and sheets and tinware.	do	92. 00	220 lbs.	4. 048

Provisional and new tariffs of Turkey—Continued.

Number.	Articles.	New tariff.			
		Turkish.		Equivalent in American currency.	
		Unit.	Duty in gold.	Unit.	Duty in gold.
59	Tin—Continued.				
	Finished articles in tin: Common tinware, such as pipes, dishes, plates, kettles, and other vessels, neither polished nor varnished.	100 kilos ..	156. 00	220 lbs.	\$6. 864
	Fine or varnished tinware: Goods in tin, combined with materials other than wood or iron, as well as tin foil, ornaments of apparel, buttons, spoons, teapots, and such like articles.	do	270. 00	do	11. 88
60	Tobacco:				
	Leaf:				
	Tombehi or Persian tobacco	do	224. 50	do	9. 878
	Tobacco in the leaf, or coarse or fine cut (prohibited).	do		do	
	Cigars and cigarettes:				
	Cigars and tobacco leaf, rolled	100 kilos ..	3, 000. 00	220 lbs.	132. 00
	Cigars or cigarettes, even partially manufactured, of coarse or fine-cut tobacco (prohibited).	do		do	
	Snuff	100 kilos ..	2, 300. 00	220 lbs.	101. 20
	Chewing tobacco	do	1, 125. 00	do	49. 50
	All other manufactured tobacco and waste (prohibited).	do		do	
61	Vegetables:				
	Onions	100 kilos ..	4. 50	220 lbs.	. 198
	Garlic	do	15. 00	do	. 66
	Other vegetables not specified	do	15. 00	do	. 66
	Vegetables dried, corn in powder, boiled or salted.	do	30. 00	do	1. 32
62	Wood:				
	Hard woods for building, cabinet-making, or carpentering, viz:				
	Box wood	do	6. 00	do	. 264
	Ebony	do	10. 00	do	. 44
	Mahogany	do	16. 00	do	. 704
	Walnut	do	4. 00	do	. 176
	Rose-wood	do	18. 00	do	. 792
	Oak, chestnut, maple, &c	do	2. 40	do	. 105
	White woods for building or carpentering, viz:				
	Sawed or planed, in blocks, planks, laths or boards.	Cub. met..	16. 00	Cub. met..	. 704
	Masts, yards, and poles in the rough, or shaped by ax.	do	10. 00	do	. 44
	Staves, in hard and white woods	100 kilos ..	4. 00	220 lbs.	. 176
	Manufactures:				
	Furniture covered in whole or in part with cloth.	do	225. 00	do	9. 90
	Bent wood furniture, entire or in pieces	do	97. 50	do	4. 29
	Seats, plain, in common woods	do	82. 50	do	3. 63
	Seats in woods used for cabinet making	do	135. 01	do	5. 94
	Seats in all kinds of woods carved, gilt, bronzed, inlaid, &c.	do	210. 00	do	9. 24
	Solid furniture:				
	Other than seats in common wood	do	82. 50	do	3. 63
	Other than seats in fancy woods with or without molding, but neither carved, inlaid, nor ornamented, &c.	do	135. 00	do	5. 94
	Other than seats in fancy woods, ornamented with carvings, &c.	do	240. 00	do	10. 56
	Furniture veneered:				
	Without carving	do	127. 50	do	5. 61
	Carved, &c.	do	240. 00	do	10. 56
63	Wool:				
	All kinds, including alpaca, lama, vicuna, angora, and other goats' hair and other camels' hair:				
	Combed or carded	do	80. 00	do	3. 52
	Dyed	do	100. 00	do	4. 40
	Raw, washed or unwashed	do	36. 00	do	1. 584
	Shoddy and other waste	do	16. 00	do	. 704
64	Zinc:				
	Ore	do	2. 00	do	. 088
	Ingots or bars	do	12. 00	do	. 528
	Scrap zinc and zinc waste	do	8. 00	do	. 352

UNITED KINGDOM.

Customs tariff of Great Britain on the products and manufactures of the United States.

[Prepared by Consul-General Waller.]

Tariff classification.	Tariff rates of duty.	Equivalent in United States money.
	£ s. d.	
Agricultural implements	Free.	
Animals	Free.	
Art works	Free.	
Bark and extracts	Free.	
Blacking	Free.	
Bones, hoofs, horns, &c.	Free.	
Books, maps, engravings, &c. [Reprints of English authors are subject to confiscation.]		
Brass and manufacturers of	Free.	
Breadstuffs	Free.	
Bricks	Free.	
Brooms and brushes	Free.	
Candles	Free.	
Carriages and horse cars	Free.	
Chemicals :		
Chloral hydrate, per pound	1 3	\$0 30
Chloroform, per pound	3 0	73
Collodion, per gallon	1 4	5 83
Ether, sulphuric, per gallon	1 5	6 08
Ethyl, iodide of, per gallon	13 0	3 16
Clocks and watches :		
On the gold, per ounce	17 0	4 14
On the silver, per ounce	1 6	36
Coal	Free.	
Copper	Free.	
Cotton	Free.	
Earthen, stone, and china ware	Free.	
Fertilizers	Free.	
Fish	Free.	
Flax, hemp, and jute manufactures	Free.	
Fruits, preserved (almonds and dates free), per cwt.	7 0	1 70
Furs	Free.	
Glass manufactures	Free.	
Glucose	Free.	
Glue	Free.	
Gunpowder	Free.	
Hair	Free.	
Hay	Free.	
Hides and skins	Free.	
Honey	Free.	
Hops	Free.	
Ice	Free.	
India-rubber manufactures	Free.	
Jewelry :		
Gold, per ounce	17 0	4 14
Silver, per ounce	1 6	36
Lamps	Free.	
Lead manufactures	Free.	
Leather manufactures	Free.	
Lime and cement	Free.	
Malt liquors :		
Beer, mum, and spruce, the original specific gravity not exceeding 1.215 degrees, per barrel	1 6	6 32
Exceeding 1.215 degrees, per barrel	1 10 6	7 41
The worts of which before fermentation of a specific gravity of 1.057 degrees, per barrel	6 6	1 58
Medical instruments	Free.	
Naval stores, including resin, tar, turpentine, and pitch	Free.	
Oil cakes and meal	Free.	
Oils—animal, mineral, and vegetable	Free.	
Paraffine and wax	Free.	
Paints	Free.	

Customs tariff of Great Britain on the products, &c., of the United States—Continued.

Tariff classification.	Tariff rates of duty.	Equivalent in United States money.
	£ s. d.	
Paper manufactures.....	Free.	
Plated ware	Free.	
Provisions.....	Free.	
Quicksilver.....	Free.	
Seeds	Free.	
Soap, transparent, in the manufacture of which spirit has been used, per pound	3	\$0 06
Spirits:		
Brandy, Geneva, rum, and unenumerated, per gallon	10 4	2 51
Perfumed spirits and Cologne water, per gallon	16 6	4 01
Sweetened, unenumerated, in bottle, not tested for ascertaining strength, per gallon	14	3 41
Starch	Free.	
Sugar and molasses.....	Free.	
Tin	Free.	
Tobacco:		
Unmanufactured, per pound	3 6	85
Containing less than 10 per cent. of moisture, per pound	3 10	93
Cigars, per pound	5 6	1 34
" Cavendish " or " Negro-head," per pound.....	4 10	1 17
Same, manufactured in bond, per pound	4 4	1 05
Snuff, per pound.....	4 1	99
Snuff, not more than 13 pounds (in 100 pounds) moisture, per pound..	4 10	1 17
Other, manufactured, per pound.....	4 4	1 05
Vegetables.....	Free.	
Wood manufactures	Free.	
Wool	Free.	
Zinc	Free.	

Customs tariff of Great Britain on articles not mentioned in Department circular of April 19, 1886.

Tariff classification.	Tariff rate of duty.	Equivalent in United States money.
	£ s. d.	
Cards, playing, per dozen packs	3 9	\$0 91
Chicory:		
Raw or kiln-dried, per cwt	13 3	3 22
Roasted or ground, per pound	2	04
Chicory and coffee mixed, per pound.....	2	04
Cocoa:		
Husks and shells, per cwt	2 0	49
Chocolate, ground, prepared, or in any way manufactured, per pound.	2	04
Coffee, kiln-dried, roasted, or ground, per pound.....	2	04
Essence of spruce, for every £100 value.....	10 00 0	48 66
Fig-cake.....	7 9	1 88
Tea.....	6	12
Wine:		
Red wine, white wine, and lees of such wine containing less than 26 degrees of proof spirit, verified by Sykes hydrometer, per gallon ..	1 0	24
Containing more than 26 and less than 42 degrees.....	2 6	61

NORTH AMERICA.

CANADA.

Tariff rates of duties in the Dominion of Canada.

[Prepared by Consul-General Wendell A. Anderson.]

No.	Classification.	Duties.*
1	Agricultural implements	35 per cent.
2	Animals:	
	Brought into Canada temporarily, and for a period not exceeding three months, for the purpose of exhibition or competition.	Free.
	For the improvement of stock, viz: Horses, cattle, sheep, and swine....	Do.
	Living of all kinds, not elsewhere specified	20 per cent.
3	Art works	Do.
4	Bark, and extracts: Cinchona bark, hemlock, tanners'	Free.
5	Blacking	25 per cent.
6	Bones, hoops, horns, &c.:	
	Bones, crude, not manufactured, burned, calcined, ground, or steamed..	Free.
7	Books, maps, engravings, &c.:	
	Books, bound printed more than seven years at date of importation.....	Do.
	Books printed by any Government or by any scientific association or other society.	Do.
	Books, educational, imported by schools for deaf and dumb, exclusively..	Do.
	Books embossed for the blind	Do.
	Books, immoral or indecent character	Prohibited.
	Books, not elsewhere specified	15 per cent.
	British copyright works, reprints of	15 p. c. and 12½ p.c.
	Bibles, prayer books, psalm and hymn books	5 per cent.
	Books, blank, viz:	
	Account books, copy book, or books to be drawn or written upon	30 per cent.
8	Brass, and manufactures of:	
	Brass, in bar and bolts, seamless drawn tubing	10 per cent.
	Brass, in strips for printer's rules, not finished	15 per cent.
	Brass, manufactures of, not elsewhere specified	30 per cent.
	Brass, wire cloth, and copper	20 per cent.
	Brass, old scrap and in sheets	Free.
	Brass, wire, or copper, round or flat	Do.
9	Breadstuffs:	
	Grain and flour and meal of all kinds, when damaged by water in transit.	20 per cent.
	Barley	15 per bushel.
	Bread and biscuits	20 per cent.
	Indian corn	7½ per bushel.
	Oats	10 per bushel.
	Rye	Do.
	Wheat	15 per bushel.
	Flour	20 per cent.
	Buckwheat	10 per bushel.
	Buckwheat meal and flour	½ cent per pound.
	Rice	1 cent per pound.
	Rice, uncleaned, unhulled, or paddy, when imported direct from the country of growth.	17½ per cent.
	Pease	10 cts. per bushel.
	Beans	15 cts. per bushel.
	Cornmeal	40 cts. per barrel.
	Oatmeal	½ cent per pound.
	Rye flour	50 per barrel.
	Wheat flour	Do.
10	Bricks:	
	For building	20 per cent.
	Fire and tiles	Do.
11	Brooms and brushes:	
	As manufactures of wood	25 per cent.
	Broom corn	Free.
12	Candles:	
	Tallow	2 cents per pound.
	Paraffine, wax	5 cents per pound.
	All other, including sperm	25 per cent.

* The native currency is the same as that of the United States.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
13	Carriages and horse-cars: Carriages, buggies of all kinds, farm wagons, farm, railway, or freight-carts. Sleighs, cutters, wheelbarrows, and hand-carts Children's carriages of all kinds Parts of carriages or of other manufactured articles shall be charged with the same rate of duty on a proportionate valuation as that chargeable upon the finished article. Carriages of travelers, and carriages laden with merchandise, and not to include circus troops nor hawkers.	35 per cent. 30 per cent. 35 per cent. Free.
14	Cars (railroad steam), railway cars.....	30 per cent.
15	Chemicals: Acid, acetic..... Muriatic and nitric..... Sulphuric..... Sulphuric and nitric combined, and all mixed acids..... Aniline dyes..... Essences, viz: Apple, pear, pineapple, raspberry, strawberry, and other fruits. Essential oils..... Lead, nitrate and acetate..... Liquorice-root, paste extract of..... Liquorice, stick..... Malt, extracts of..... Milk food..... Proprietary medicines, to wit, tinctures, pills, powders, troches or lozenges, sirups, cordials, bitters, anodynes, tonics, plasters, liniments, salves, ointments, pastes, drops, waters, essences, oils, or medicinal preparations recommended to the public under any general name, all liquids. And all others.....	25 cents per I. gal. 20 per cent. $\frac{1}{2}$ cent per pound. 25 per cent. 10 per cent. \$1.90 per gallon. 20 per cent. 5 per cent. 15 per cent. 1 cent per pound and 20 per cent. 25 per cent. 30 per cent. 50 per cent. 25 per cent.
16	Clocks and watches: Clocks, and parts thereof, except springs..... Clock springs..... Watches and cases..... Watch actions or movements.....	35 per cent. 10 per cent. 25 per cent. 20 per cent.
17	Coal: Anthracite, 2,000 pounds ton..... Bituminous, 2,000 pounds ton..... Dust.....	50 cents per ton. 60 cents per ton. 20 per cent.
18	Copper: Old and scrap, in pigs, bars, rods, bolts, ingots, and sheathing, not planished or coated, and copper seamless drawn tubing. Rivets and burrs, and manufactures of..... Wire cloth and brass..... Sheets..... Precipitate of copper, crude..... Verdigris, or sub-acetate of copper, dry..... Wire of brass or copper, round or flat.....	10 per cent. 30 per cent. 20 per cent. Free. Do. Do. Do.
19	Cotton and manufactures of: Gray or unbleached and bleached cotton, sheetings, drills, ducks, cotton or canton flannels, not stained or printed. All cottons, denims, drillings, plaids, gingham, dyed or colored, Kentucky jeans. White cotton jeans and cantilles..... Over 36 inches wide, for window-shades..... 42 inches wide and over, for enameled cloth..... Wadding, batting, batts and warps, carpet warps, knitting yarn, hosiery yarn, and other cotton yarns, under No. 40, not bleached, dyed or colored. And if bleached, dyed, or colored..... Warp No. 60 and finer..... On beams..... Thread on spools..... Thread in hanks..... All clothing made of cotton or other material not otherwise provided for.. Lampwicks..... Printed or dyed, not elsewhere specified..... All manufactures, not elsewhere specified..... Waste and cotton wool..... Yarns finer than No. 40, unbleached, bleached, or dyed, and not finer than No. 60, for the manufacture of Italian cloths and worsted fabrics. Checked, striped, or fancy cotton winceys over 25 inches wide..... Bed quilts, not including woven quilts or counterpanes.....	1 cent per sq. yd. and 15 per cent. 2 cents per square yard and 15 p.ct. 20 per cent. 15 per cent. Do. 2 cents per pound and 15 per cent. 3 cents per pound and 15 per cent. 15 per cent. 1 cent per yard and 15 per cent. 20 per cent. 12 $\frac{1}{2}$ per cent. 30 per cent. Do. 27 $\frac{1}{2}$ per cent. 20 per cent. Free. Do. 2 cents per square yard and 15 p. ct. 27 $\frac{1}{2}$ per cent.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
20	Earthen, stone, and china ware:	
	China and porcelain.....	25 per cent.
	Brown or colored, and Rockingham ware.....	30 per cent.
	White, granite, or iron-stone ware and "O. C." or cream-colored ware....	Do.
	Decorated, printed, or sponged, and all other, not elsewhere specified....	Do.
21	Fertilizers:	
	Guano, and other animal and vegetable manures.....	Free.
	Bone-dust and bone-ashes for manufacture of phosphates and fertilizers..	Do.
22	Fish:	
	Mackerel.....	1 cent per pound.
	Herrings, pickled or salted.....	$\frac{1}{2}$ cent per pound.
	Salmon, pickled.....	1 cent per pound.
	All other fish, pickled in barrels.....	Do.
	Foreign-caught fish imported otherwise than in barrels or half barrels, whether fresh, dried, salted, or pickled, not specially enumerated or provided for in this act.	50 cents per 100 pounds.
	Smoked and boneless fish.....	1 cent per pound.
	Anchovies and sardines:	
	Packed in oil, otherwise in tin boxes measuring not more than 5 inches long, 4 inches wide, and $3\frac{1}{2}$ inches deep.	5 cents per box.
	In half boxes, measuring not more than 5 inches long, 4 inches wide, and $1\frac{1}{2}$ deep.	$2\frac{1}{2}$ cents per box.
	Quarter boxes, measuring not more than $4\frac{1}{2}$ inches long, $3\frac{1}{2}$ inches wide, and $1\frac{1}{2}$ deep.	2 cents per box.
	When imported in any other form.....	30 per cent.
	Fish, preserved in oil, except anchovies and sardines.....	Do.
	Salmon and all other fish prepared or preserved, including oysters, not specially enumerated or provided for.	25 per cent.
	Oysters:	
	Shelled, in bulk.....	10 cents per gallon.
	In cans not over 1 pint.....	3 cents per can.
	In cans over 1 pint and not over 1 quart, including cans.....	5 cents per can.
	In cans exceeding 1 quart in capacity, an additional specific duty of 5 cents for each quart or fraction of a quart of capacity, including cans.	5 cents per quart.
	In the shell.....	25 per cent.
	Fish, bait.....	Free.
	The following articles, when the natural products or the manufactures of the colony of Newfoundland, viz: Fish, fresh, dried, salted, or smoked, fish oil, and all products of fish.	Free.
23	Flax, hemp, and jute, manufactures of:	
	Canvas of hemp or flax and sail twine, when to be used for boats' and ships' sails.	5 per cent.
	Carpeting, matting, and mats of hemp.....	25 per cent.
	Flax fiber:	
	Scutched.....	1 cent per pound.
	Hackled.....	2 cents per pound.
	Flax, tow of, scutched or green.....	$\frac{1}{2}$ cent per pound.
	Jute, carpeting, or matting and mats.....	25 per cent.
	Jute, manufactures of, not elsewhere specified.....	20 per cent.
	Hemp, undressed.....	Free.
	Jute butts.....	Do.
	Jute.....	Do.
	Jute and hemp, rags, fit only for manufacture of paper.....	Do.
	Jute cloth, as taken from the loom, neither pressed, mangled, calendered, nor in any way finished, and not less than 42 inches wide, when imported to be manufactured into bags only.	Do.
24	Fruits and preserved fruits:	
	Rasins.....	1 cent per pound and 10 per cent.
	Dried, viz: Currants, dates, figs, prunes, and all other dried fruits, not elsewhere specified.	1 cent per pound.
	Green, viz: Blackberries, gooseberries, raspberries, and strawberries, including the weight of the package.	4 cents per pound.
	Peaches, including the weight of the package.....	1 cent per pound.
	Cherries and currants.....	1 cent per quart.
	Cranberries, plums, and quinces.....	30 per bushel.
	Oranges and lemons.....	20 per cent.
	In air-tight or other packages, including cans or other packages weighing not over 1 pound.	3 cents per can or package.
	For each pound or fraction of a pound over 1 pound in weight.....	3 cents per can or package.
25	Furs:	
	Skins, wholly or partially dressed.....	\$1 per I. gal.
	Preserved in brandy and other spirits.....	15 per cent.
	Caps, hats, muffs, tippets, capes, coats, cloaks, and other manufacture of fur.	25 per cent.
	Fur skins of all kinds, not dressed in any manner.....	Free.
	Hatters' furs, not on the skin.....	Do.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
26	Glass and manufactures of: Carboys and demijohns, bottles and decanters, flasks and phials of every description, telegraph and lightning-rod insulators; jars and glass balls, and cut, pressed, or molded table ware. Ornamented, figured, and enameled stained glass; stained, tinted, painted and vitrified glass, and stained glass, windows, figured, enameled, and obscured white glass. Silvered plate Common and colorless window glass Imitation porcelain shades, and colored glass, not figured, painted, enameled or engraved. All other glass and manufactures of glass not herein otherwise provided for. Plate glass, not colored, in panes not over 30 square feet Plate glass in panes over 30, and not over 70 square feet Plate glass in panes over 70 square feet Bent for manufacturers of show cases, provided it is not made in Canada.	30 per cent. Do. Do. Do. 20 per cent. 20 per cent. 6 cts per sqr. foot. 8 cts per sqr. foot. 9 cts per sqr. foot. Free. 2 cents per pound. 20 per cent.
27	Glucose, or grape sugar to be classed and rated for duty as sugar according to grade, by Dutch standard in color, sirup.	20 per cent.
28	Glue	
29	Gunpowder: Gun, rifle, and sporting powder, in kegs, half kegs, or quarter kegs, and other similar packages. Cannon and musket powder, in kegs and barrels Canister powder, in pound and half-pound tins Blasting and mining powder Giant powder, dualin dynamite, and other explosives in which nitro-glycerine is a constituent part.	5 cents per pound. 4 cents per pound. 15 cents per pound. 3 cents per pound. 5 cents per pound, and 20 per cent.
30	Hair: Curled Cloth of all kinds Angola, buffalo, and bison, camel, goat, hog, horse, and human, cleaned, or uncleaned, but not curled or otherwise manufactured.	20 per cent. 30 per cent. Free.
31	Hay	20 per cent.
32	Hides and skins: Hides and skins raw, whether dried, salted, or pickled All other leather and skins tanned, not elsewhere specified	Free. 20 per cent.
33	Honey, bees', in the comb or otherwise	3 cents per pound.
34	Hops	6 cents per pound.
35	Ice	Free.
36	India-rubber manufactures: Boots and shoes, and other manufactures of, not elsewhere specified India-rubber clothing, or clothing made water-proof with india-rubber .. India-rubber vulcanized handles for knives and forks	25 per cent. 35 per cent. 10 per cent.
37	Iron and steel manufactures: Tubing, wrought iron, plain, 2 inches in diameter or under, coupled, and threaded, or not. Wire, iron or steel, galvanized or not, fifteen gauge and coarser Wire-fencing, buckthorn, strip, and other similar fencing wire of iron or steel. Hoop-iron, not exceeding three-eighths of an inch in width, and being No. 25 gauge or thinner, used for the manufacture of tubular rivets. Pig In slabs, blooms, loops, or billets, puddled or not, and muck and puddled bars or billets. In bars, rolled or hammered, including flats, rounds, and squares, nail and spike rods, and all other iron not otherwise provided for. Rolled round wire rods, in coils under half an inch in diameter Iron rails or railway bars for railways or tramways Railway fish plates, frogs, frog-points, chairs and finger-bars Band and hoop, sheets, smoothed or polished, coated or galvanized, and common or black, No. 17 gauge or thinner, boiler-plate, and Canada plates. Iron and steel wire, galvanized or not, over fifteen gauge, and not elsewhere specified. Stoves and other castings, and forgings not elsewhere specified Gas, water, and soil pipes of cast iron Car-wheels and axles of, iron or steel Rolled beams, channels and angle, and T-iron, steel or iron and steel Iron bridges and structural iron work, malleable iron castings and iron safes, and doors for safes and vaults. Locomotive engines and stationary, fire, or other steam engines and boilers, and other machinery composed wholly or in part of iron, and not elsewhere specified, Locomotive tires of steel or Bessemer steel, in the rough Wrought-iron tubing, plain, not threaded, coupled, or otherwise manufactured, over 2 inches in diameter. Wrought-iron tubing, plain, two inches in diameter or under, coupled and threaded or not.	30 per cent. 20 per cent. 1½ cents per pound. Free. \$2 per ton. 10 per cent. 17½ per cent. 10 per cent. 15 per cent. 17½ per cent. 12½ per cent. 15 per cent. 25 per cent. Do. Do. 12½ per cent. 25 per cent. Do. 10 per cent. 15 per cent. 25 per cent.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
37	Iron and steel manufactures—Continued.	
	Lap-welded boiler-iron tubing, not threaded, coupled, or otherwise manufactured, 1½ inches in diameter and over.	15 per cent.
	Ornamental iron work and wire work.	25 per cent.
	Skates and locks of all kinds.	30 per cent.
	Tinned, glazed or enameled hollow-ware, of cast or wrought iron.	25 per cent.
	Hardware, viz: Builder, cabinet-makers', upholsters', and carriage-makers', saddlers' and undertakers', including coffin trimmings of metal.	30 per cent.
	Bolts, washers, and rivets, of iron or steel.	Do.
	Forks, cast-iron, not handled, ground or otherwise further manufactured.	10 per cent.
	Printing presses of all kinds.	Do.
	Pumps, iron, pitcher-spout, cistern, well and force pumps.	35 per cent.
	Tacks, brads, and sprigs, Hungarian and clout nails.	30 per cent.
	Horse-shoes and horse-shoe nails.	30 per cent.
	Iron-wire nails, called "Pointes de Paris".	30 per cent.
	Iron and steel screws, commonly called "wood-screws".	35 per cent.
	Scales, balance and weighing beams.	30 per cent.
	Chain cables, over nine-sixteenths of an inch in diameter, whether shackled or swiveled or not.	5 per cent.
	Nails and spikes—	
	Cut.	½ c. p. lb. and 10 p. ct.
	Wrought and pressed, whether galvanized or not.	½ c. p. lb. and 10 p. ct.
	Composition nails and spikes and sheathing-nails.	20 per cent.
	Nuts of iron or steel.	1 c. per lb. and 10 p. c.
	All articles rated as iron or manufactures of iron shall be chargeable with the same rate of duty if made of steel, or of steel and iron combined, unless otherwise expressly provided.	
	Screws of iron, steel, brass, or other metal, not otherwise provided for.	30 per cent.
	Silver, rolled, and German and nickel silver in sheets.	10 per cent.
	Steel, ingots, bars, sheets, under ⅜ of an inch, whole or cut to shape, but not further manufactured, and rolled round wire, rods in coil, not elsewhere specified.	\$3 per ton of 2,000 lbs. and 10 per ct.
	Steel, rolled round wire rods under ½ an inch in diameter, when imported by wire manufacturers for use in their factories.	5 per cent.
	Steel, needles, viz, cylinder needles, hand frame needles and latch needles.	30 per cent.
	Carpenters', coopers', cabinet-makers', and all other mechanics' tools, edge tools of every description, axes and saws of all kinds.	30 per cent.
	Files and rasps.	35 per cent.
	Fire-arms, viz, muskets, rifles, pistols, and shot-guns; cutlery and all manufactures of steel, and of iron and steel, not elsewhere specified.	20 per cent.
	Knife blades or knife blanks, in the rough, unhandled, for use by electro-platers.	10 per cent.
38	Jewelry and manufactures of gold and silver.	20 per cent.
39	Lamps and gas-light shades, lamps and lamp chimneys.	30 per cent.
40	Lead and manufactures:	
	Old, scrap, and pig.	40 cents per 100 lbs.
	Lead, bars, blocks and sheets.	69c per 100 pounds.
	Lead pipe and lead shot.	1½ cents per pound.
41	Leather and manufactures:	
	Sole, tanned but rough or undressed.	10 per cent.
	Sole and belting leather, and all upper leather, including kid, lamb, sheep, and calf, tanned or dressed, but not waxed or glazed, dressed and waxed or glazed.	15 per cent.
	Japanned, patent, or enameled leather.	20 per cent.
	Cordova leather, tanned from horse-hide, and manufactures of.	25 per cent.
	All other leather and skins tanned, not elsewhere specified.	20 per cent.
	Boots and shoes and other manufactures of leather, and leather belting.	25 per cent.
42	Lime and cement:	
	Cement, raw, or in stone from the quarry.	\$1.00 per ton.
	Cement burnt and unground.	7½c per 100 pounds.
	Cement, hydraulic or water lime, ground, including barrels.	40 cents per barrel.
	Cement, in bulk or in bags.	9 cents per bushel.
	Cement, Portland or Roman.	20 per cent.
43	Malt liquors:	
	Ale, beer, and porter—	
	When imported in bottles (six-quart or twelve pint-bottles to be held to contain one imperial gallon).	18 cents per imperial gallon.
	When imported in casks or otherwise than in bottles.	10c p. imperial gal (Not given).
44	Medical instruments:	
	Surgical instruments—	
	Steel.	20 per cent.
	Plated.	30 per cent.
	Musical instruments of all kinds not otherwise provided for.	25 per cent.
45	Naval stores:	
	Rosin.	Free.
	Tar pine.	Do.
	Turpentine, and pitch, raw or crude.	Do.
46	Oil cake and meal.	Do.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
47	Oils: Animal and fish, viz : Lard, neatsfoot, sperm..... Spermaceti, whale, and other fish-oils, and all other articles the produce of the fisheries, not especially provided for. <i>Provided</i> , That the whole or part of the said duties hereby imposed may be remitted upon proclamation of the governor in council, which may be issued whenever it appears to his satisfaction that the Government of the United States and the island of Newfoundland, or either of them, have made changes in their tariffs of duties imposed upon articles imported from Canada in reduction or repeal of the duties in force in said countries. Cod liver, medicated..... Carbolic or heavy oil..... Coal and kerosene, distilled, purified, or refined; naphtha, benzole, and petroleum; products of petroleum, coal, shale, and lignite, not elsewhere specified. Lubricating oils, composed wholly or in part of petroleum, and costing 30 cents per imperial gallon. The same, costing less than 30 cents per imperial gallon..... All other.....	20 per cent. Do. 20 per cent. 10 per cent. 7½ c. per imp. gall. 25 per cent. 7½ c. per imp. gall. 25 per cent.
48	Paraffine wax or stearine.....	3 cents per pound.
49	Paints and colors: Ground in oil or any other liquid..... Not elsewhere specified.....	25 per cent. 20 per cent.
50	Paper and manufactures of: Hangings or wall-paper and glazed, plated, marbled, enameled, or embossed paper, in rolls or sheets, and card-boards similarly finished. Calendered..... Ruled..... Of all kinds not elsewhere specified..... Envelopes and all manufactures of paper not elsewhere specified..... Paper, union collar cloth in sheets, not shapen..... Mill board, not straw board..... Collars, cuffs, and shirt fronts of paper, linen or cotton..... Playing cards..... Tissue paper, white and colored, when imported by manufactures of artificial flowers for use in their factories. Paper waste or clippings, and waste of any kind fit only for manufacture of paper.	30 per cent. 22½ per cent. 25 per cent. 20 per cent. 25 per cent. 5 per cent. 10 per cent. 30 per cent. 6 cents per pack. 10 per cent. Free.
51	Plated ware, viz: Electro plated and gilt of all kinds, including cutlery, plated wholly or in part. Communion plate, and plated ware for use in churches.....	30 per cent. Free.
52	Provisions: Meats, fresh or salted, on actual weight as received in Canada, except shoulders, sides, bacon, and hams. Shoulders, sides, bacon, and hams, fresh, salted, dried, or smoked..... All other dried or smoked meats, or meats preserved in any other way than salted or pickled, not elsewhere specified (if imported in cans, the rate to include the duty on the cans, and the weight on which duty shall be payable to include the weight of the cans, Oleomargarine, butterine, or other substitute for butter..... Lard, tried or rendered..... Lard, untried..... Butter..... Cheese.....	1 cent per pound. 2 cents per pound. 2 cents per pound. 10 cents per pound. 2 cents per pound. 1½ cents per pound. 4 cents per pound. 3 cents per pound.
53	Quicksilver.....	Free.
54	Seeds, viz: Flower, garden, field, and other seeds, for agricultural purposes, when in bulk or in large parcels. When put in small papers or parcels..... Anise, coriander, cardamon, fennel, and fenugreek.....	15 per cent. 25 per cent. Free.
55	Soap: Common, brown, and yellow, not perfumed..... Castile and white..... Perfumed or toilet..... Soap powders.....	1½ cents per pound. 2 cents per pound. 30 per cent. 3 cents per pound.
56	Spirits: Spirits and strong waters not having been sweetened or mixed with any article, so that the degree of strength thereof cannot be ascertained by Sykes' hydrometer, for every imperial gallon of the strength of proof of such hydrometer, and so in proportion for any greater or less strength than the strength of proof, and for every greater or less quantity than a gallon, viz, Geneva gin, rum, whisky, alcohol, or spirits of wine, and unenumerated, unmixed, and not sweetened spirits by whatever name called. Old Tom gin.....	\$1.75 imp. gallon. \$1.99 per imp. gal.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
56	Spirits—Continued. Spirits and strong waters, mixed with any ingredient or ingredients, and although thereby coming under the denomination of proprietary medicines, tinctures, essences, extracts, or any other denomination, including medicinal elixirs and fluid extracts, whether in bulk or bottle, not elsewhere specified, shall be nevertheless deemed to be spirits or strong waters. Geneva gin, rum, whisky, and unenumerated articles of like kinds Brandy	\$2 p. imp. gal. and 30 per cent. \$1.75 per imp. gal. \$2 per imp. gal.
57	Spirits and strong waters not elsewhere specified	\$1.90 per imp. gal.
58	Starch, including farina, corn-starch or flour, and all preparations having the qualities of starch. Sugar: Melado, concentrated melado, concentrated cane-juice, concentrated molasses, concentrated beet-root juice, and concrete, when imported direct from the country of growth, the production for refining purposes only, not over No. 13 Dutch standard in color, and not testing over seventy degrees by the polariscope. Not for refining purposes, not over 13 Dutch standard in color, when imported direct from the country of growth and production. All sugars above No. 13 Dutch standard in color, and on refined sugar of all kinds, grades or standards. All sugars not imported direct without transshipment from the country of growth and production. Refined sugars of all grades or standards	2 cents per pound. 1 c. p. lb., 70 deg. test, and 13½ cts. per 100 lbs. for each deg. above 70. 1 cent per pound and 30 per cent. 1½ cent per pound and 35 per cent. 7½ per cent of duty additional. 1 c.p.lb. and 35 p. ct. 1 c.p.lb. and 30 p. ct.
	Sirups, cane juice, refined sirup, sugar-house sirup or sugar-house molasses, sirup of molasses or sorghum, whether imported direct or not. Molasses, other, when imported direct without transshipment and from the country of growth and production. Molasses when not so imported	15 per cent. 20 per cent. 5 c. p. imp. gall.
	Molasses, when not so imported for or received into any refinery or sugar factory, or to be used for any other purposes than actual consumption. Sugar candy, brown or white, and confectionery	1½ c.p.lb. and 35 p. ct.
59	Tin: Tinware, stamped and japanned ware and all manufactures of tin not elsewhere specified. Cans or packages made of tin or other material, containing fish of any kind, admitted free of duty under any existing law or treaty, not exceeding one quart in contents. When exceeding one quart an additional duty of one cent and a half for each additional quart or fractional part thereof. Crystals of	25 per cent. 1½ cents on each can or package. 20 per cent.
60	In blocks, pigs, bars, and sheets, and plates and tin foil..... Tobacco: Manufactured	Free. 30 cents per pound and 12½ per cent.
	Unmanufactured, for excise purposes, under conditions of act 31 Victoria, cap. 51; Cigars and cigarettes	\$1.20 per pound and 20 per cent.
61	Vegetables, viz: Potatoes	10 cents per bushel.
	Tomatoes	30 cents per bushel.
	Tomatoes and other vegetables, including corn, in cans, or other packages weighing not over one pound each, 2 cents per can or package, and 2 cents additional per can or package for each pound, or fraction of a pound over 1 pound in weight (the rate to include the duty on the cans, or other packages, and the weight on which duty shall be payable to include the weight of the cans or packages).	2 cents per can.
	All other vegetables, including sweet potatoes	20 per cent.
62	Wood and manufactures: Moldings of wood, plain	25 per cent.
	Moldings of wood, gilded or otherwise further manufactured than plain.	30 per cent.
	Furniture of wood, iron, or any other material, house, cabinet, or office, finished or in parts, including hair and spring, and other mattresses, bolsters and pillows, caskets and coffins of any material.	35 per cent.
	Show-cases	\$2 00 each, and 35 per cent.
	Shingles	20 per cent.
	Pails, tubs, churns, brooms, brushes, and other manufactures of wood not elsewhere shown.	25 per cent.
	Hubs, spokes, felloes, and parts of wheels, rough hewn or sawn only....	15 per cent.
	Lumber and timber, not elsewhere specified.....	20 per cent.
	Veneers of wood and ivory, only.....	Free.
	For fuel, when imported into Manitoba and the northwest territories....	Free.
	Woods, not further manufactured than sawn or split, viz. African teak, black heart ebony, lignumvitæ, red cedar, and satin wood.	Free.

Tariff rates of duties in the Dominion of Canada—Continued.

No.	Classification.	Duties.
63	Wool:	
	All fabrics composed wholly or in part of wool, worsted, the hair of the alpaca, goat, or other like animals, not elsewhere specified.	22½ per cent.
	Manufactures composed wholly or in part of wool, worsted, the hair of the alpaca, goat, or other like animals, viz, blankets and flannels of every description, cloths, doeskins, cassimeres, tweeds, coatings, overcoatings, felt cloth of every description not elsewhere specified; horse-collar cloth, yarn, knitting yarn, fingering yarn, worsted yarn, knitted goods, viz, shirts, drawers, and hosiery not elsewhere specified.	7½ c. p. lb. & 20 p.c.
	Clothing, ready-made and wearing apparel of every description, including socks and stockings, cloth caps and horse clothing, shaped, composed wholly or in part of wool, worsted, the hair of the alpaca, goat, or other like animals, made up or manufactured wholly or in part by the tailor, seamstress, or manufacturer, except knit goods.	10 c. p. lb. & 25 p.c.
	All manufactures composed wholly or in part of wool, worsted, the hair of the alpaca, goat, or other like animals not herein otherwise provided for.	20 per cent.
	Treble ingrain, three-ply and two-ply carpets, composed wholly of wool.	10 cts. per sq. yard and 20 per cent.
	Two-ply and three-ply ingrain carpets, of which the warp is composed wholly of cotton or other material than wool, worsted, the hair of the alpaca, goat, or other like animals.	5 cts. per sq. yard and 20 per cent.
	Felt for boots and shoes and skirts, when imported by the manufacturers for use in their factories.	15 per cent.
	Felt for glove linings and endless felt for paper-makers, when imported by the manufacturers for use in their factories.	10 per cent.
	Winceys, plain, of all widths, when the material is not over one-fourth wool.	20 per cent.
	Checked, striped, or fancy, not over 25 inches wide.	20 per cent.
	Checked, striped, or fancy-dress winceys, over 25 inches wide, and not over 30 inches, when the material is not more than one-fourth wool.	2 cts. per sq. yard and 15 per cent.
	(But all checked, striped, or fancy winceys over 30 inches wide, shall be subject to duty as woollen goods when the material is partly wool.)	
	Raw, class 1, viz, Leicester, Cotswold, Lincolnshire, Southdown combing wools, or wools known as luster wools, and other like combing wools, such as are grown in Canada.	3 cts. per pound.
	Raw, unmanufactured, hair of the alpaca, goat, and other like animals, not elsewhere specified.	Free.
	Woolen rags	Free.
64	Zinc:	
	Seamless drawn tubing	10 per cent.
	Manufactures of zinc, not elsewhere specified	25 per cent.
	Colors, metallic, viz:	
	Cobalt, zinc, and tin in blocks, pigs and sheets	Free.
	White and red lead, and orange mineral, dry, also white zinc.	5 cts. per pound.
	Zinc, chloride, salts and sulphate of	5 cts. per pound.

The full Canadian tariff was printed in Consular Reports No. 72, p. 503.

MEXICO

[Prepared by Consul-General Sutton.]

COMMENT.

There is no discrimination as to imports from different countries. A rebate or discount is or has been allowed on imports in Mexican bottoms.

The Mexican duty is reduced to American money at 80 cents on the dollar.

Manufactures of linen or hemp mixed with cotton pay as linen.

Manufactures of wool mixed with cotton, linen, or hemp pay as woollen.

Manufactures composed of two or more materials not specially mentioned pay according to the highest rate.

Merchandise of unknown materials pays according to analogy. This applies specially to earthen, china, crystal, and glass ware.

By brandies (*aguardientes*) is understood all spirituous liquors which, according to the centesimal alcoholometer of Gay-Lussac, weigh from 15 to 88 degrees, or 12.16 to 35 degrees of Cartier. Those which exceed these weights shall be classed as alcohol.

Net weight is the intrinsic weight of the merchandise; legal weight that which includes the weight of the bottles, boxes, braces (*almas*), wrappings, &c., inside; and gross weight means the total weight of the package.

The numbers 1 to 64, and the titles which immediately follow them, are those given in the circular from the Department. The numbers in parentheses are those given in the translation of the Mexican tariff above mentioned. If the number in parenthesis follows the title it is a duty fixed by a ruling of the Treasury Department.

Any article not specified by the tariff is examined and the duty established by analogy.

Import duties of Mexico.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
1	(414)	Agricultural implements.....	Kilo	\$0 00½	\$0 00½
		Plows and their shares.....	.....	Free.	.....
2	.....	Animals:			
		All kinds alive.....	.....	Free	.....
	(644)	Geldings.....	Each ...	40 00	32 00
3	.....	Art works:			
	(390)	Prints, paintings, engravings, and lithographs of all classes, with or without frames, gross weight.	Kilo	65	52
	(269)	Statues and busts:			
		Marble or alabaster, of natural sizes or larger dimensions, gross weight.	... do....	10	08
	(270)	Gypsum or stucco, of natural size or larger dimensions, gross weight.	... do....	05	04
	(318)	Iron, of natural sizes or larger dimension, gross weight.	... do....	10	08
	(319)	Copper, bronze or any other alloy of common metals, of natural size or larger dimensions, gross weight.	... do....	15	12
	(320)	Zinc, of natural size or larger dimensions, gross weight.	... do....	10	08
	(390)	Photographs.....	... do....	65	52
4	.....	Bark and extracts:			
	(518)	Barks, herbs, leaves, flowers, fruits, seeds, and roots, medicinal, gross weight.	... do....	20	16
	(548)	Extracts of logwood, of Brazil wood, and all dye-woods, gross weight.	... do....	05	04
5	(348)	Blacking and polish for shoes, gross weight.....	... do....	25	20
6	.....	Bones, hoofs, horns, &c. (not stated).			
	(655)	Manufactures of.....	... do....	30	24
7	.....	Books, maps, engravings, &c.:			
	(463)	Blank books, ruled or with spaces for writing, with ordinary binding, gross weight.	... do....	95	76

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
7		Books, maps, engravings, &c.—Continued.			
	(464)	Books, bound in velvet, shell, ivory, tortoise-shell or metal not gold or silver, gross weight.	Kilo	\$1 25	\$1 00
	(465)	Books, bound in gutta-percha, wood or composition, gross weight.	... do	1 00	80
	(466)	Books, printed, in paper covers or bound, other than those specified, gross weight.	... do	01	$\frac{1}{2}$
	(468)	Charts, geographical, topographical and nautical, gross weight.	... do	01	$\frac{1}{2}$
	(469)	Documents (forms), of all classes, printed, engraved, or lithographed, with or without spaces for writing on them, gross weight.	... do	65	52
	(470)	Music, periodicals, and advertisements, printed, gross weight.	... do	01	$\frac{1}{2}$
8		Brass and manufactures of:			
	(338)	Wire, of copper or brass, gross weight	... do	30	24
	(300)	Manufactures of: Copper or brass, wire, of all classes, not gilded or plated, if not specified, gross weight.	... do	35	28
	(301)	Copper, brass, bronze, or any other alloy of common metals, without gilding or plating, not specified, gross weight.	.. do ...	30	24
	(302)	Copper or brass, tinned, enameled, or japanned, not specified, net weight.	... do	40	32
	(303)	Copper, brass, or any other common metal, gilded, plated or nickel-plated, not specified, gross weight.	... do	1 30	1 04
9		Breadstuffs:			
		Barley:			
	(189)	Other than pearled, gross weight.....	... do	04	03
	(518)	Pearled	... do	20	16
		Bread and biscuits, wheat bread	... do	15	12
	(208)	Crackers, of all classes, gross weight.....	... do	15	12
	(207)	Indian corn, gross weight	... do	01	$\frac{1}{2}$
	(220)	Oats, gross weight.....	... do	01	$\frac{1}{2}$
		Rye, not stated.			
	(224)	Wheat, net weight.....	... do	05	04
	(245)	Wheat flour, of all classes, net weight.....	... do	11	09
	(206)	Corn meal, gross weight.....	... do	01	$\frac{1}{2}$
10	(251)	Bricks, not refractory.....	M	2 40	1 92
11		Brooms and brushes:			
	(351)	Brushes (painters' brushes) and pencils of all classes, gross weight.	Kilo	30	24
	(618)	Brooms of heather, of all sizes and classes, gross weight.	... do	15	12
12		Candles:			
	(620)	Stearine and pressed or unpressed tallow, gross weight.	... do	15	12
	(621)	All classes not specified, gross weight	... do ...	60	48
13		Carriages and horse-cars.			
14		Cars (railroad, steam), coaches, and cars for railroads.	... do ...	Free .....	.....
		Carriages, of all classes:			
	(421)	That weigh up to 100 kilograms, excepting those specified, net weight.	... do ...	60	48
	(422)	That weigh more than 100 up to 250 kilograms, net weight.	... do ...	55	44
	(423)	That weigh more than 250 up to 500 kilograms, net weight.	... do ...	50	40
	(424)	That weigh more than 500 up to 750 kilograms, net weight.	... do ...	45	36
	(425)	That weigh more than 750 up to 1,000 kilograms, net weight.	... do ...	40	32
	(426)	That weigh more than 1,000 kilograms, net weight.	... do ...	35	28
	(427)	Carriages, small, for children, of all classes, net weight.	... do ...	30	24
	(428)	Carts (two wheels), wagons (four wheels), of all dimensions, gross weight.	... do ...	06	05
	(429)	Diligences and omnibuses, of all classes, net weight.	... do ...	10	08
	(430)	Shafts (front running gear), for carriages, gross weight.	... do ...	40	32
	(431)	Velocipedes, gross weight.....	... do ...	20	16
	(432)	Wagons (guayines), of all classes and sizes, net weight.	... do ...	20	16
	(433)	Wheelbarrows, of one or two wheels, and hand-carts, gross weight.	... do ...	01	$\frac{1}{2}$

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
14	.....	Cars, &c.—Continued.			
		Wheels, separate:			
	(434)	For carriages, gross weight	Kilo	\$0 40	\$0 32
	(435)	For wagons (carts), of all dimensions, gross weight.	do ...	15	12
15	(540)	Chemical products not specified, legal weight.....	do ...	75	60
16	.....	Clocks and watches:			
		Clocks, for table or wall:			
	(411)	With case of wood, gross weight	do ...	45	36
	(412)	Not specified, nor of gold or silver, gross weight	do ...	1 25	1 00
		Watches:			
	(416)	Of gold with or without precious stones, striking.	Each ...	14 00	11 20
	(417)	Of gold with or without precious stones, not striking.	do ...	6 75	5 40
	(418)	Silver, striking	do ...	5 00	4 00
	(419)	Silver, not striking	do ...	1 30	1 04
	(420)	All classes, of metal not specified	do ...	50	40
17	.....	Coal	Free		
18	.....	Copper (ore not specified, ingots, bar, and sheet):			
	(281)	Pigs, gross weight	Kilo	10	08
	(282)	Beaten in leaves, gilded, or plated, gross weight	do ...	45	36
19	.....	Cotton and manufactures:			
	(1)	Bandas* and scarfs of cotton, of all textures, without embroidery, net weight.	do ...	1 80	1 44
	(2)	Bandas of cotton, of all textures:			
		Embroidered in cotton or wool, net weight	do ...	2 10	1 68
	(3)	Embroidered with silk, net weight	do ...	3 00	2 40
	(4)	Canvas, of cotton, linen, or hemp, net weight	do ...	65	52
	(5)	Chemises and wraps of cotton cloth, plain or embroidered, for ladies and girls, net weight.	do ...	3 00	2 40
	(6)†	Clothing, ready-made, of cotton and their separate parts, when they come sewed, of all class and textures, with or without trimmings of lace; strips embroidered of cotton or linen; belts (ribbons) of silk or metal, not gold or silver, for men and boys, excepting those specified, legal weight.	do ...	2 50	2 00
	(7)	Collars and cuffs, of cotton or linen, of all classes, including embroidered ones, net weight.	do ...	3 60	2 88
	(8)	Corsets, of cotton, linen, or wool, of all sizes, net weight.	do ...	1 90	1 52
	(9)	Cotton waste or soiled thread, gross weight	do ...	2	2
	(10)	Cotton:			
		Unginned, gross weight.....	do ...	03	02
	(11)	Ginned, gross weight.....	do ...	08	06
	(12)	Cotton cloth:			
		Unbleached or white, of plain texture, even when clarified.	Sq. m ...	11	09
	(13)	Mottled, dyed, or stamped, of plain texture, even when clarified.	do ...	15	12
	(14)	Unbleached, white, or colored, of all kinds of texture, not plain, open-worked, (hemstitched), nor embroidered.	do ...	17	14
	(15)	White or colored, open-worked (hemstitched), or embroidered.	do ...	20	16
	(16)	Cotton or linen strips, embroidered in cotton or linen, net weight.	Kilo	2 70	2 16
	(17)	Coverlets, blankets, sarapes,* tilmas,† and counterpanes of cotton, net weight.	Sq. m ...	75	60
	(18)	Covers (linings), of cotton, sewed, or in patterns, for umbrellas, sunshades, parasols, net weight.	Kilo ...	2 10	1 68
	(19)	Cravats, of cotton, goods of all classes, net weight	do ...	1 90	1 52
	(20)	Curtains, of cotton, of all classes except those of net	Sq. m ...	20	16
	(21)	Dress patterns, of cotton, partly made of all classes, with or without trimming or embroidery, of cotton, for ladies and girls, net weight.	Kilo	1 20	96
	(22)	Dress patterns, of cotton cloth, of all classes, excepting that specified, net weight.	do ...	1 90	1 52
	(23)	Elastic, of cotton and india-rubber, more than four centimeters in width, net weight.	do ...	70	56
	(24)	Elastic braid, cord, or tape, of cotton, which measures up to four centimeters in width, net weight.	do ...	1 60	1 28

* Sarape, a sort of blanket.

† Tilma, Mexican name for sort of wrap.

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
19	.....	Cotton and manufactures—Continued.			
	(25)	Fringe, galoon, passementerie, edging, tape, cord- ing, and netting, of cotton, linen, or hemp, or without bugles of glass or metal, with other than gold or silver, net weight.	Kilo	\$2 50	\$2 00
	(26)	Garters and suspenders, of cotton, with or without buckles, &c., legal weight.	do ...	65	52
	(27)	Gloves, of cotton or linen, of all sizes:			
		Unlined, net weight.....	do ...	3 70	2 96
	(28)	Lined, net weight.....	do ...	1 90	1 52
	(29)	Hair nets, of cotton, net weight	do ...	3 20	2 56
	(30)	Handkerchiefs, of cotton:			
		Without embroidery, of all colors and textures, with or without hems or borders.	Sq. m ...	16	12
	(31)	Embroidered with drawn work or trimmed with cotton lace, each.	Each ...	18	14
	(32)	Lace and net, of cotton, and all the manufactures of these materials, even when they are adorned with silk or metal.	Kilo	6 70	5 36
	(33)	Plaitings (flutings), of cotton muslin, with or with- out cotton lace, net weight.	do ...	5 30	4 24
		Rebozos (cotton shawls), and those goods stamped, marbled, or striped with figures or designs to imitate rebozos:			
	(34)	Up to 26 threads of warp and woof in a square of one-half centimeter.	Sq. m ...	1 20	96
	(35)	Of more than 26 and up to 38 threads of warp and woof in a square of one-half centimeter.	Kilo	2 20	1 76
	(36)	From 38 to 64 threads of warp and woof in a square of one-half centimeter.	do ...	4 90	3 92
		Shawls, of cotton (and similar wraps), of all tex- tures except net (lace):			
	(37)	With or without fringe or embroidery of cot- ton or wool, net weight.	do ...	2 40	1 92
	(38)	With or without woolen or cotton embroidery, and with fringe of silk and wool, or silk and cotton, net weight.	do ...	3 20	2 56
	(39)	Shirts, of cotton cloth, white and colored, plain or embroidered, of all sizes, net weight	do ...	1 30	1 04
	(40)	Shirt-bosoms of cotton, of all classes, net weight	do ...	2 20	1 76
	(41)	Skirt patterns, of cotton, plain or embroidered, net weight.	do ...	2 20	1 76
	(42)	Socks, stockings, underdrawers, and undershirts, knitted, of cotton, and all kinds of knitted manufactures not specified, net weight.	do ...	1 75	1 36
	(43)	Tassels, of cotton, even when their <i>almas</i> (inside) are of some other material, net weight.	do ...	70	56
	(44)	Thread, of cotton, of all classes, sizes, and colors, in- cluding crochet cotton, net weight.	do ...	1 60	1 28
	(45)	Umbrellas, sunshades, and parasols, of cotton	Each....	60	48
	(46)	Underdrawers, of cotton cloth, of all sizes, net weight.	Kilo ...	1 80	1 44
	(47)	Vests and jackets, of cotton, of stocking-net text- ure, of all sizes, net weight.	do ...	1 10	88
		Weaver's yarn, cotton:			
	(48)	Colored, net weight	do ...	1 10	88
	(49)	White or brownish, net weight.....	do ...	70	56
	(50)	Wicking of cotton, gross weight	do ...	16	13
		(See Cotton mixed with linen, &c., under head of 23, Flax, hemp, and jute.)			
20		Earthen, stone, and china ware:			
	(253)	Crockery ware, porcelain, and china-ware, made in pieces of all forms, classes, and sizes, with- out mountings or inlaid work, of any material and with the exception of those specified, gross weight.	do ...	15	12
	(252)	Clay, manufactures of, not specified, gross weight..	do ...	15	12
	(248)	Alabaster, manufactures of, or of marble, not spec- ified, gross weight.	do ..	25	20
	(254)	Crucibles, of all sizes, gross weight.....	do ...	01	$\frac{4}{5}$
	(258)	Demijohns, of all sizes, without allowance for break- age, gross weight.	do ...	03	02
	(274)	Toys of glass, crystal, earthenware, porcelain, or chinaware, of all classes and sizes, gross weight.	do ...	45	36
21		Fertilizers, not stated.			

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
22	(210)	Fish: Fish and cockles of all classes, dried, smoked, salted, or pickled, legal weight.	Kilo	\$0 12	\$0 09
	(231)	Preserves of all classes, with exception of those specified, legal weight.	dc ...	80	64
	(616)	Blubber of sperm-whale, gross weight.	do ...	01	4
23		Flax, hemp, and jute manufactures:			
		Carpets and rugs:			
	(51)	Of hemp or tow alone, of plain, crossed, or figured (worked) texture.	Sq. m...	20	16
	(52)	Of hemp alone, or any other vegetable fiber not specified, rough.	do ...	30	24
	(53)	Of hemp alone, or any other vegetable fiber not specified, smooth.	do ...	40	32
		Chemises, of linen:			
	(54)	Plain, for women and girls, net weight.	Kilo	5 60	4 48
	(55)	Embroidered, for women and girls, net weight.	do ...	10 00	8 00
	(56)	Clothing, ready-made, of linen, and their separate parts when they come sewed, with or without lace trimmings, strips of linen or cotton, embroidered and silk ribbons, for men and boys, with the exception of those specified, net weight.	do ...	3 00	2 40
	(57)	Covers (linings), of linen, sewed or in patterns, for umbrellas, sunshades, and parasols, net weight.	do ...	2 90	2 32
	(58)	Cravats, of linen, net weight.	do ...	3 70	2 96
	(59)	Dress patterns, of linen, partly made, of all classes, with or without trimmings or embroideries of linen, or of linen and cotton, for women and girls, net weight.	do ...	1 50	1 20
	(60)	Elastic, of linen or hemp, with india-rubber, of more than 4 centimeters in width, net weight.	do ...	80	64
	(61)	Garters and suspenders, of linen or hemp, with or without buckles, &c., legal weight.	do ...	90	72
	(62)	Goods of linen, cut in dress patterns, of all classes, with the exception of those specified, net weight.	do ...	2 00	1 60
		Goods of linen, hemp, of hemp-tow, or herb-tow:			
	(63)	White, brownish, or colored, of plain texture, which have up to 12 threads of warp and woof in a square of one-half centimeter.	Sq. m ...	13	10
	(64)	White, brownish, or colored, of plain texture, which have more than 12 and up to 36 threads of warp and woof in a square of one-half centimeter.	do ...	19	15
	(65)	Goods of linen, white and colored, of plain texture, of more than 36 threads of warp and woof in a square of one-half centimeter.	do ...	20	16
		Goods of linen or hemp, unbleached, white, or colored:			
	(66)	Of all classes of texture, not plain, open-worked, or embroidered.	do ...	23	13
	(67)	Open-worked or embroidered.	do ...	35	28
		Handkerchiefs, of linen:			
	(68)	Plain, white, and colored, of all textures, with or without hems or borders.	do ...	20	16
	(69)	Embroidered with open-work or trimmed with lace.	Each....	40	32
	(70)	Hemp, crude or unworked, net weight.	Kilo	07	06
	(71)	Hemp, or tow, or oakum, gross weight.	do ...	14	12
	(72)	Lace and net, of linen, and every manufacture of these materials even when they have some ornament of silk or metal other than gold or silver, legal weight.	do ...	9 50	7 60
	(73)	Linen (fiber), crude or unworked, gross weight.	Kilo	08	06
		Rebozos (long shawls), of linen, and those textures stamped, marbled, striped, with figures or designs that imitate rebozos:			
	(74)	Up to 26 threads of warp and woof in a square of one-half centimeter.	Sq. m...	1 95	1 56
	(75)	Of more than 26 or up to 38 threads of warp and woof in a square of one-half centimeter.	do ...	2 90	2 32
	(76)	Of more than 38 and to 64 threads of warp and woof in a square of one-half centimeter.	do ...	6 15	4 92
		Shirt-bosoms, of linen:			
	(77)	Plain, net weight.	Kilo	5 75	4 60
	(78)	Embroidered, net weight.	do ...	8 30	6 64

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
23	.....	Flax, hemp, and jute manufactures—Continued.			
		Shirts, of linen:			
	(79)	Plain, white and colored, of all sizes, net weight.	Kilo	\$3 80	\$3 04
	(80)	Embroidered, of all sizes, net weight.	do ...	7 00	5 60
	(81)	Skirt-patterns, of linen, with or without embroidery, net weight.	do ...	4 30	3 44
	(82)	Socks, stockings underdrawers, and undershirts of linen stockinet, and all manufactures of linen stockinet not specified, net weight.	do ...	2 00	1 60
	(83)	Thread, of crude hemp, fine or coarse, including such as is half twisted, of all sizes, in balls or skeins, net weight.	do ...	16	13
	(84)	Thread, of linen or hemp, white or colored, including carded thread for long shawls (rebozos), net weight.	do ...	2 40	1 92
	(85)	Umbrellas, sunshades, and parasols of linen.	Each ...	85	68
	(86)	Underdrawers, of linen cloth, of all sizes, net weight.	Kilo	2 45	1 96
	(87)	Yarn (thread), of linen, hemp, or tow, white or colored, net weight.	do ...	14	11
	(157)	Clothing, ready-made, and their separate parts, when they come sewed, of all classes and textures, of silk with mixture of cotton, linen, or wool, with or without trimmings of any material, and excepting those specified, net weight.	do ...	12 00	10 00
		Cord, of hemp:			
	(158)	Covered with silk and cotton, or silk and wool, net weight.	do ...	2 80	2 24
	(159)	Covered with silk, net weight.	do ...	6 00	4 80
	(160)	Corsets, of silk, with mixture of cotton, linen, or wool, of all sizes, net weight.	do ...	3 80	3 04
	(161)	Elastic, of silk and rubber, with mixture of cotton, linen, or wool, of more than four centimeters in width, net weight.	do ...	1 25	1 00
	(162)	Elastic, of silk and rubber, of more than four centimeters in width.	do ...	1 40	1 12
		Elastic braid, cord, and ribbon:			
	(163)	Of cotton and silk, or of wool and silk, that measure up to four centimeters in width, net weight.	do ...	4 70	3 76
	(164)	Of silk, which measure up to four centimeters in width.	do ...	7 00	5 60
	(165)	Goods, whose warp and woof may be of cotton, linen, or wool, and have beside a mixture of silk in stripes, squares, flowers, or figures, and even when they contain in small quantity a mixture of metal, not gold or silver, net weight.	do ...	3 50	2 80
	(166)	Goods, of cotton, linen, or wool, with mixture of silk, when the warp or the woof is of silk only, net weight.	do ...	5 00	4 00
	(167)	Goods, of silk, when in the warp or woof there is a mixture of cotton, linen, or wool, net weight.	do ...	7 50	6 00
		Rebozos (long shawls) and those textures, stamped, marbled, striped, with figures or designs that imitate rebozos:			
	(175)	Of silk, with mixture of cotton, linen, or wool, up to 26 threads of warp and woof in a square of one-half centimeter, net weight.	do ...	9 40	7 52
	(176)	Of silk, with mixture of cotton, linen, or wool, of more than 26 up to 38 threads of warp and woof in a square of one half centimeter, net weight.	do ...	13 75	11 00
	(177)	Of silk, with mixture of cotton, linen, or wool, of more than 38 up to 64 threads of warp and woof in a square of one-half centimeter, net weight.	do ...	23 20	18 56
	(180)	Sarapes, imitation of those of Saltillo, worked or stamped, of wool, with mixture of silk, net weight.	do ...	13 40	10 72
	(184)	Socks, stockings, underdrawers, and undershirts, of stockinet, of silk, with mixture of cotton, linen, or wool, and all manufactures of this kind not specified, net weight.	do ...	7 00	5 60
34	.....	Fruits, preserved:			
	(211)	In brine, net weight	do ...	10	88
	(212)	Dried, net weight	do ...	10	08
	(213)	In their own juice, legal weight	do ...	55	44
	(214)	In brandy, legal weight	do ...	80	64
	(215)	Fruits and vegetables, fresh, not specified, gross weight.	do ...	01	4

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
24	.....	Fruits, preserved—Continued.			
	(223)	Olives, stuffed (prepared) or in oil, legal weight ...	Kilo	\$0 10	\$0 08
	(231)	Preserves, of all classes, with exception of those specified, legal weight.	do ...	80	64
25	.....	Furs:			
	(499)	Skins (fur), of all classes, unprepared, net weight.	do ...	10	08
	(614)	Beaver fur, of all classes, net weight.	do ...	1 15	2 52
	(678)	Skin, of the vicugna, rabbit, hare, and other similar, net weight.	do ...	1 60	1 28
26	.....	Glass and manufactures:			
	(249)	Beads (strings of cheap, light glass beads), of all classes and imitation pearls, net weight.	do ...	1 25	1 00
	(250)	Bottles, empty, of common glass, for bottling wines, liquors, beer, without allowance for breakage, gross weight.	do ...	03	02
	(255)	Crystal and ground glass in pieces of all forms, classes, and sizes, without mountings or inlaid work of any material, and with the exception of those specified, without allowance for breakage, gross weight.	do ...	20	16
	(256)	Crystal, cut, imitating fine stones, of all classes, gross weight.	do ...	1 30	1 04
	(257)	Crystals, for watches, and those separate for spectacles, gross weight.	do ...	45	36
	(258)	Demijohns, of all sizes, without allowance for breakage, gross weight.	do ...	03	02
	(264)	Mirrors, with or without frames, up to 30 centimeters on a side, without allowance for breakage, gross weight.	do ...	25	20
	(265)	Mirrors, with or without frames, of more than 30 centimeters on one of its sides, even when the others are less in size, without allowance for breakage, gross weight.	do ...	45	36
	(274)	Toys, of glass, crystal, earthenware, porcelain, or chinaware, of all classes and sizes, gross weight.	do ...	45	36
	(276)	Window-glass, of all classes and colors, without allowance for breakage, gross weight.	do ...	25	20
	(368)	Glass, for spectacles and lenses, set in any material except gold or silver, gross weight.	do ...	1 30	1 04
	.....	Glasses:			
	(369)	Field and opera glasses, gross weight.	do ...	1 25	1 00
	(370)	Spectacle, unmounted, classed as Nos. 6 and 8, and ordinary lenses for magnifying, of glass marked with the numbers 1, 2, and 3, gross weight.	do ...	30	24
	(637)	Flowers, artificial, and feathers, for ornaments, of all materials not silk, metal, glass, or porcelain, legal weight.	do ...	3 10	2 48
27	.....	Glucose, not stated.			
28	.....	Glue, not stated.			
27	.....	Gunpowder:			
	(443)	Common, for mines, gross weight.	do ...	01	⁴ / ₈
	(444)	Not given in the preceding number, gross weight.	do ...	1 10	88
	(437)	Caps, all kinds, percussion, gross weight.	do ...	45	36
	(438)	Cartridges, loaded or not, for firearms, gross weight.	do ...	50	40
30	.....	Hair:			
	(645)	Human, net weight.	do ...	11 00	8 80
	(127)	Of neat cattle.	do ...	13	10
31	(635)	Hay, feed, dry, in straw, gross weight.	do ...	01	⁴ / ₈
32	(487)	Hides and skins, calf skins, patent leather, kid, chamois, and other prepared skins, net weight. (See, also, Furs, ante.)	do ...	1 55	1 24
33	(218)	Honey and molasses, net weight.	do ...	08	06
34	(555)	Hops, net weight.	do ...	20	16
35	(652)	Ice, gross weight.	do ...	01	00 ¹ / ₂
36	.....	India-rubber and manufactures:			
	(410)	Apparatus of gum-elastic, gutta-percha, silk, and other materials for use in medicine and surgery, legal weight.	do ...	1 10	88
	(391)	Rubber, for erasing, and mucilage, for writing-desks, gross weight.	do ...	30	24
	(613)	Bands of rubber, that do not come united to any machinery, forming part of it, gross weight.	db ...	20	16
	(693)	Tubing, of rubber or gutta-percha, of all dimensions, gross weight.	do ...	10	08

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
36		India-rubber and manufactures—Continued.			
	(668)	Rubber, India, in sheets, when it does not come attached to any machinery in convenient form for being used upon it, gross weight.	Kilo	\$0 10	\$0 08
	(669)	Rubber, in strips, for cushions for billiard-tables, and spun into threads, gross weight.	do ...	48	39
	(670)	Rubber, for foot wear, all forms and sizes, gross weight.	do ...	50	40
	(671)	Rubber, in articles of dress, of all forms and sizes, gross weight.	do ...	1 60	1 28
	(672)	Rubber, prepared for dentists, gross weights.	do ...	2 00	1 60
	(673)	Rubber cloth, suitable for making articles of dress or any other analogous use, gross weight.	do ...	90	72
37		Iron and steel, and manufactures:			
	(277)	Bars of steel, for mines, cylindrical or octagonal, gross weight.	do ...	01	$\frac{1}{2}$
	(279)	Beams, iron, for roofs, provided they cannot be use for other objects in which iron is employed, gross weight.	do ...	01	$\frac{1}{2}$
	(280)	Cable of iron or steel wire, of all thicknesses, gross weight.	do ...	01	$\frac{1}{2}$
	(2e3)	Cots, of iron, for camp, including the covers and mattresses when they come attached to the same, gross weight.	do ...	25	20
	(285)	Furniture, of iron, of all classes, with or without marble tops and mirrors, gross weight.	do ...	25	20
	(288)	Iron, in pigs, gross weight.	do ...	01	$\frac{1}{2}$
	(289)	Iron, grooved, for roofs, gross weight.	do ...	04	03
	(290)	Iron, rolled (sheet-iron), beaten, cast, prepared for hoops, gross weight.	do ...	10	08
	(291)	Iron, of all qualities, in bulk, round bars, plates, large hammers, shoes, and unwrought pieces of all sizes, including anvils, gross weight.	do ...	07	06
	(296)	Knives, ordinary cutlasses, without sheaths (machetes), scythes, sickles, rakes, shovels, pickaxes, spades, hoes, and mattocks, of iron or steel, for agriculture, gross weight.	.. do ...	01	$\frac{1}{2}$
	(298)	Manufactures of iron or steel, not specified, gross weight.	do...	21	17
	(299)	Manufactures of iron, tinned, enameled, or japanned, gross weight.	do ...	26	21
	(308)	Masks, of iron or steel wire, including those for fencing, each.	do ...	45	36
	(309)	Nails and brads, of iron, of all sizes, gross weight.	do ...	13	10
	(310)	Needles: Not exceeding 5 centimeters in length, gross weight.	do ...	95	76
	(311)	Exceeding 5 centimeters in length, gross weight.	do ...	35	28
	(312)	Pens, of steel or other metal, not gold or silver, gross weight.	do ...	95	76
	(315)	Scissors: Wrought, of not more than 14 centimeters in length, gross weight	do ...	95	76
	(316)	Wrought, of more than 14 centimeters in length, gross weight.	do ...	30	24
	(317)	Cast, of all sizes, gross weight.	do ...	20	16
	(318)	Statues and busts, of iron, of natural sizes or larger dimensions, gross weight.	do ...	10	08
	(321)	Steel, net weight	do ...	07	06
	(327)	Tools and instruments, of iron, steel, brass, or wood, or composed of these materials, for artisans, gross weight.	do ...	10	08
	(328)	Tubing, of iron, of all dimensions, gross weight	do ...	01	$\frac{1}{2}$
	(331)	Wire, of iron or steel: For carding, from No. 26 upward, gross weight.	do ...	01	$\frac{1}{2}$
	(332)	Galvanized or not, with the exception of those specified, gross weight.	do ...	10	08
	(333)	Wire, of iron, barbed, for fences, and the fasteners, provided they are imported with the same wire, gross weight.	do ...	03	02
	(334)	Wire, iron, covered with cotton cloth, gross weight.	do ...	15	12
	(335)	Wire, of iron or steel, dressed, for artificial flowers, gross weight.	do ...	35	28
	(336)	Wire and hoops, of iron, with clasps and rivets, for fastening packages, gross weight.	do ...	10	08
	(337)	Wire, manufactures of iron or steel wire, of all classes not specified, gross weight.	do ...	25	20

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
38		Jewelry:			
	(292)	Jewelry and all kinds of works of gold or platina:	Hee'gram	\$5 00	\$4 00
	(293)	With pearls or precious stones, net weight....	do ...	4 00	3 20
		Jewelry and all classes of works of silver or of silver and gold:			
	(294)	With pearls or precious stones, net weight....	do ...	3 50	2 80
	(295)	Without pearls or precious stones, net weight....	do ...	2 50	2 00
39		Lamps:			
	(253)	Crockery ware, porcelain and china-ware, made in pieces of all forms, classes, and sizes, without mountings or inlaid work of any material, and with the exception of those specified, gross weight.	Kilogram	15	12
	(255)	Crystal and ground glass, in pieces of all forms, classes, and sizes, without mountings or inlaid work of any material, and with the exception of those specified, without allowance for breakage, gross weight.	do ...	20	16
	(301)	Manufactures of copper, brass, bronze, or any other alloy of common metals, without gilding or plating, not specified, gross weight.	do ...	30	24
	(303)	Manufacturers of copper, brass, or any other common metal, gilded, plated or, nickel-plated, not specified, gross weight. (Also, according to materials.)	do ...	1 30	1 04
40		Lead and manufactures:			
	(297)	Lead, in bulk in block or sheets, gross weight	do ...	07	06
	(436)	Ammunition, lead, gross weight	do ...	07	06
41		Leather and manufactures:			
	(481)	Bands (belting), of leather, when they do not come attached to any machinery forming a part of it, gross weight.	do ...	50	40
	(482)	Blinders, of leather, gross weight	do ...	30	24
		Boots and half boots:			
	(483)	Of cow-hide	Pair	1 50	1 20
	(484)	Of calf-skin, or patent leather	do ...	2 50	2 00
	(485)	Bridles and reins, of leather or any other material, gross weight.	Kilo	65	52
	(486)	Buckles (clasps), of brass or iron, covered with leather, gross weight.	do ...	20	16
	(487)	Calf-skins, patent leather, kid, chamois, and other prepared skins, net weight.	do ...	1 55	1 24
	(488)	Gaiters, of leather or cloth, other than silk, with or without elastic and ornaments.	Pair	90	72
	(490)	Gloves, plastrons, and leggings, for fencing	Piece ...	30	24
		Gloves of skin, of all classes, plain or embroidered:			
	(491)	Unlined, net weight	Kilo	6 00	4 80
	(492)	Lined, net weight	do ...	3 25	2 60
	(493)	Harnesses for carriages, gross weight	do ...	1 50	1 20
	(494)	Leather, manufactures of, not specified, gross weight.	do ...	60	48
	(496)	Saddles, of all classes, with or without ornaments, not of gold or silver, net weight.	do ...	2 00	1 60
		Shoes, low:			
	(497)	Of leather or material other than silk, with or without adornments.	Pair	45	36
	(498)	Of silk, with or without ornaments	do ...	80	64
	(500)	Slippers, or low shoes, of leather, or other material which do not contain silk or metal.	do ...	40	32
	(501)	Uppers, for slippers, of leather or cloth, which do not contain silk or metal, net weight.	do ...	75	60
	(502)	Uppers, for gaiters, unsoled, of leather or cloth, other than silk, with or without ornaments, net weight.	do ...	3 30	2 64
42		Lime and cement:			
	(262)	Lime, hydraulic, gross weight	do ...	01	$\frac{1}{2}$
	(261)	Gypsum, manufactures of, or of stucco, not specified, gross weight.	do ...	20	16
43		Malt liquors:			
		Beer and cider:			
	(190)	In bottles, without allowance for leakage or breakage, net weight.	do ...	30	24
	(191)	In barrels, without allowance for leakage or drums, net weight.	do ...	20	16
		Ginger beer in bottles. (See Beer in bottles.)			

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
44	(558)	Medical instruments:			
	(566)	Injections, of all substances, legal weight	Kilo	\$0 55	\$0 44
	(601)	Medicine chests, with flasks full or empty, net weight.	do ...	45	36
	(410)	Test cases, gross weight	do ...	3 30	2 64
	(393)	Apparatus, of gum-elastic, gutta-percha, silk, and other materials, for use in medicine and surgery, legal weight.	do ...	1 10	88
45	(599)	Scientific instruments, gross weight	do ...	01	4
		Naval stores, resin, tar, turpentine, and pitch:			
		Tar or pitch (resin), gross weight	do ...	04	03
		(Otherwise not classified.)			
46		Oil cake and meal, not stated.			
47		Oils, animal, mineral, and vegetable:			
	(524)	Castoreum, legal weight	do ...	4 70	3 76
	(550)	Fish oil, of all classes, and cod liver oil, pure or prepared, in any form, legal weight.	do ...	10	08
	(551)	Fixed oils, not specified, except olive oil, legal weight.	do ...	55	44
	(552)	Glycerine, gross weight	do ...	10	08
	(563)	Linseed oil, net weight	do ...	25	20
	(570)	Naphthaline, legal weight	do ...	1 30	1 04
	(606)	Volatile or essential oils, excepting those rated, legal weight.	do ...	4 40	3 62
	(664)	Petroleum, or coal oil, purified, without allowance for leakage, net weight.	do ...	10	08
		Gasoline. (See Petroleum.)			
	(665)	Petroleum, crude, or naphtha, gross weight	do ...	01	4
		Olive oil:			
	(221)	(In jugs or tin cans, without allowance for breakage, net weight.	do ...	51	12
	(222)	In glass vessels, without allowance for leakage or breakage, net weight.	do ...	20	16
	(663)	Perfumery, not specified, gross weight	do ...	95	76
48		Paraffine and wax:			
	(694)	Wax, white or brown, net weight	do ...	55	44
	(695)	Wax, virgin, net weight	do ...	50	40
49		Paints:			
	(385)	Paints, in boxes, of all classes, gross weight	do ...	35	28
	(535)	Colors, crude or prepared, legal weight	do ...	15	12
50		Paper and manufactures:			
	(462)	Albums, with or without (places for?) photographs, with covers and ornaments of all materials not gold or silver, gross weight.	do ...	1 10	88
	(463)	Blank books, ruled or with spaces for writing, with ordinary binding, gross weight.	do ...	95	76
		Books:			
	(464)	Bound in velvet, shell, ivory, tortoise-shell, or metal, not gold or silver, gross weight.	do ...	1 25	1 00
	(465)	Bound in gutta-percha, wood, or composition, gross weight.	do ...	1 00	80
	(466)	Printed, in paper covers, or bound, other than those specified, gross weight.	do ...	01	4
	(467)	Brown paper and wrapping paper, gross weight	do ...	08	06
	(468)	Charts, geographical, topographical, and nautical, gross weight.	do ...	01	4
	(469)	Documents (forms, of all classes), printed, engraved, or lithographed, with or without spaces for writing on them, gross weight.	do ...	65	52
	(470)	Music, periodicals, and advertisements, printed, gross weight.	do ...	01	4
	(471)	Paper or pasteboard, manufactures of, of all classes, gross weight.	do ...	45	36
		Paper:			
	(472)	Sized or unsized, unglossed, and blotting paper, of all colors, gross weight.	do ...	10	08
	(473)	Very white, moderately white, for accounts and letters, of all classes, and that for cigarettes, gross weight.	do ...	32	26
	(474)	Engraved or lithographed, for envelopes or tickets, gross weight.	do ...	65	52
	(475)	For walls, not gilt, silver, or velvet finish, gross weight.	do ...	12	10
	(476)	Pitched, tarred, cloth-lined, and impermeable, gross weight.	do ...	07	06
	(477)	All classes and colors, not specified, gross weight.	do ...	20	16

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
50	-----	Paper and manufactures—Continued.			
		Pasteboard:			
	(488)	All thicknesses, beaten or not, excepting those specified, gross weight.	Kilo	\$0 20	\$0 16
	(479)	In large sheets, medium sheets, bristol board, albumenized, porcelain paper, and that used for making playing cards, gross weight.	do ...	48	38
	(480)	Playing cards of all classes, gross weight.	do ...	1 05	84
	(392)	Sandpaper, gross weight.	do ...	06	05
	(656)	Manufactures of straw or reed, not specified, gross weight.	do ...	45	36
51	-----	Plated ware:			
	(303)	Manufactures of copper, brass, or any other common metal, gilded, plated, or nickel-plated, not specified, gross weight. (Not otherwise specially classified.)	do ...	1 30	1 04
52	-----	Provisions:			
	(200)	Meats, fresh, fresh beef, pork and fowl meat.	do ...	25	20
	(236)	Salt, sausages of all kinds, or smoked or salted meats, including ham, net weight.	do ...	25	20
		Oleomargarine, not stated.			
	(216)	Lard, net weight	do ...	20	16
	(194)	Butter, net weight	do ...	25	20
	(197)	Cheese, of all classes, net weight.	do ...	15	12
53	-----	Quicksilver.	Free		
54	-----	Seeds:			
	(666)	Plants and seeds for the improvement of agriculture, except those quoted, gross weight.	Kilos ...	01	1
	(195)	Canary seed.	do ...	08	06
	(196)	Canary seed and anise, net weight	do ...	10	08
	(209)	Cummin seed, net weight	do ...	08	06
	(226)	Peas (Spanish), beans, and chick peas, gross weight.	do ...	02	01
	(518)	Barks, herbs, leaves, flowers, fruits, seeds, and roots (medicinal), gross weight.	do ...	20	16
55	-----	Soap:			
	(679)	Common, not perfumed, gross weight	do ...	18	14
	(680)	Fine, with or without perfume, gross weight.	do ...	1 25	1 00
	(592)	Medicinal, gross weight.	do ...	30	24
56	-----	Spirits:			
	(193)	Brandies, of all classes, in glass or wooden vessels, without allowance for leakage, breakage, or drums, net weight.	do ...	75	60
	(217)	Liquors, of all classes, in glass or wooden vessels, without allowance for breakage, leakage, or drums, net weight.	do ...	40	32
	(508)	Alcohol or spirits of wine (cognac), net weight.	do ...	90	72
		Anisado. (See Brandies.)			
		Anisete. (See Liquors.)			
		Arrack. (See Brandies.)			
		Kirsch-wasser. (See Brandies.)			
		Marrasquino. (See Liquors.)			
		Rum. (See Brandies.)			
		Spirits of wine. (See Alcohol.)			
		Whisky. (See Brandies.)			
57	(594)	Starch, washing, gross weight.	do ...	08	06
58	-----	Sugar:			
	(237)	Common or refined, of all classes, gross weight	do ...	15	12
	(218)	Molasses and honey, net weight.	do ...	08	06
59	-----	Tin:			
	(322)	Block tin, or in grain, gross weight.	do ...	30	24
	(323)	Block tin, in sheets, leaves, and other manufactures, not specified, gross weight.	do ...	35	28
		Tin plate:			
	(324)	In sheets of all thicknesses and dimensions, gross weight.	do ...	07	06
	(325)	Manufactured in all classes of works, not specified, gross weight.	do ...	25	20
	(326)	Manufactured, in all kind of works, enameled or japanned, not specified, gross weight.	do ...	30	24
60	-----	Tobacco, leaf, cigars, cigarettes:			
		Tobacco:			
	(685)	Plug, for chewing, net weight.	do ...	68	54
	(686)	Fine cut, net weight	do ...	1 10	88
	(688)	In the leaf, not Virginia, net weight.	do ...	1 37	1 09
	(689)	Virginia, in the leaf, net weight	do ...	18	14
	(690)	Made into cigarettes, of all classes, legal weight.	do ...	1 37	1 09
	(691)	Made into cigars, net weight	do ...	5 40	4 32
	(692)	Smoking, net weight	do ...	1 37	1 09

Import duties of Mexico—Continued.

Circular No.	Mexican tariff No.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
67	(215)	Vegetables: Fruits and vegetables, fresh, not specified, gross weight.	Kilos ...	\$0 01	\$0 00½
	(241)	Vegetables, preserved, of all classes, in juice or dry, legal weight.	do ...	40	32
	(224)	Onions, fresh, gross weight	do ...	03	02
	(226)	Peas (Spanish), beans, and chick peas, gross weight.	do ...	02	01
	(228)	Peppers, large, unprepared, or in oil or powder, legal weight.	do ...	50	40
	(230)	Potatoes, gross weight	do ...	03	02
		Garlic, fresh, like Onions.			
62	(449)	Wood and manufactures: Barrels and boxes, of ordinary wood, empty, for packing, gross weight.	do ...	05	04
	(450)	Boxwood, gross weight	do ...	01	½
	(451)	Corks, plugs, or bungs, of wood, gross weight.	do ...	06	05
	(452)	Cots, of wood, for camp, including the covers and mattresses when they come attached to the same, gross weight.	do ...	16	13
	(453)	Frames and mouldings, gilded or ungilded, gross weight.	do ...	45	36
	(454)	Furniture, of all classes: Of ordinary wood, whether painted or varnished or not, including furniture, of reed or bent wood, with or without marble tops or mirrors, gross weight.	do ...	15	12
	(455)	Of fine woods, veneered or solid, and that covered with skin or any goods not containing silk, and with or without marble tops or mirrors, gross weight.	do ...	25	20
	(456)	Furniture, of all classes and materials, with inlaid or ornaments of shell, ivory, tortoise-shell, or metal, not gold or silver, and those covered with goods of silk or goods containing silk, and with or without marble tops or mirrors, gross weight.	do ...	35	28
	(457)	Handles and helms for tools, gross weight.	do ...	10	08
	(458)	Hubs, posts, and spokes, of wood, for carriages, gross weight.	do ...	06	05
	(459)	Manufactures of wood not specified, gross weight.	do ...	30	24
	(460)	Staves and heading, of wood, for barrels, gross weight.	do ...	01	½
	(461)	Wood, ordinary, cut, for boxes for packing, gross weight.	do ...	02	01
	(309)	Shoe pegs	do ...	13	10
	(458)	Rough wooden poles for steel lances.	do ...	06	05
	(494)	Wooden valises, lined with straw	do ...	60	48
	(454)	Common wooden furniture with common upholstery	do ...	15	12
	(656)	Wooden cloth	do ...	45	36
	(635)	Wood shavings for furniture stuffing	do ...	01	½
	(458)	Wooden hoops for car awnings.	do ...	06	05
	(460)	Barrel hoops, of wood	do ...	01	½
	(5)	Masts for large or small vessels	Free		
	(8)	Houses, complete, of wood or iron	do ...		
	(10)	Vessels of all kinds, on their naturalization, sale, or introduction.	do ...		
	(13)	Wood	do ...		
	(14)	Timber (lumber)	do ...		
	(20)	Oars for vessels	do ...		
63	(127)	Wool: In the fleece, net weight.	Kilo ...	13	10
	(128)	Carded, net weight.	do ...	20	16
64	(341)	Zinc: In sheets, gross weight	do ...	10	08
	(304)	Manufactures of zinc: Not specified, gross weight.	do ...	25	20
	(305)	Enameled, tinned, or japanned, not specified, gross weight.	do ...	30	24

The full tariff of Mexico was printed in Consular Reports No. 53½; the later modifications in No. 71, p. 401.

CENTRAL AMERICA.

HONDURAS.

Customs tariff of Honduras.

[Report of Vice-Consul George Bernhard.]

Number.	Tariff classification.	Unit.	Duty.	*Equivalent in United States money.
1	Agricultural implements.....		Free.....	
2	Animals.....		Free.....	
3	Art works.....	Pound†.....	\$1. 50.....	\$1 20.....
4	Bark and extracts.....	do.....	.24.....	19½.....
5	Blacking.....	do.....	.08.....	06½.....
6	Bones, hoops, horns, &c.....		Free.....	
7	Books, maps, engravings.....		Free.....	
8	Brass and manufacturers of:			
	Bruto weight.....	Pound.....	.02.....	01½.....
	Manufactured.....	do.....	.04.....	03½.....
9	Breadstuffs:			
	Barley.....	do.....	.02.....	01½.....
	Bread and biscuits.....	do.....	.02.....	01½.....
	Indian corn.....		Free.....	
	Oats.....		Free.....	
	Rye.....		Free.....	
	Wheat.....		Free.....	
	Flour.....		Free.....	
10	Bucks.....		Free.....	
11	Brooms and brushes.....	Pound.....	.08.....	06½.....
12	Candles.....	do.....	.04.....	03½.....
13	Carriages and horse cars.....		Free.....	
14	Cars (railroad, steam).....		Free.....	
15	Chemicals.....	Pound.....	.24.....	19½.....
16	Clocks and watches:			
	Clocks.....	do.....	.24.....	19½.....
	Watches.....	do.....	1. 50.....	1 20.....
17	Coal.....		Free.....	
18	Copper:			
	Ore.....	Pound.....	.02.....	01½.....
	Ingots, bar.....	do.....	.02.....	01½.....
	Sheet.....	do.....	.02.....	01½.....
19	Cotton.....	do.....	.02.....	01½.....
	Manufactures.....	do.....	\$0. 12 to .24.....	\$0 09½ to 19½.....
20	Earthen, stone, and china ware, according to quality.....	do.....	.02 and .04.....	0 01½ to 03½.....
21	Fertilizers.....		Free.....	
22	Fish.....	Pound.....	.02.....	01½.....
23	Flax, hemp, and jute.....	do.....	.02.....	01½.....
	Manufactures.....	do.....	1. 50.....	1 20.....
24	Fruits, preserved.....	do.....	.08.....	06½.....
25	Furs.....	do.....	.50.....	40.....
26	Glass.....	do.....	.02.....	01½.....
	Manufactures.....	do.....	.02.....	01½.....
27	Glucose, according to quality.....	do.....	.12 and .14.....	0 09½ to 11½.....
28	Glue.....	do.....	.12 and .14.....	0 09½ to 11½.....
29	Gunpowder, monopoly of the Government.....			
30	Hair (human).....	do.....	1. 50.....	1 20.....
31	Hay.....		Free.....	
32	Hides and skins, according to quality.....	Pound.....	12 and .30.....	0 09½ to 24.....
33	Honey.....	do.....	.02.....	01½.....
34	Hops.....	do.....	.02.....	01½.....
35	Ice.....		Free.....	
36	India-rubber, manufactured.....	Pound.....	.12.....	09.....
37	Iron and steel.....	do.....	.02.....	01½.....
	Manufactures.....	do.....	.04.....	03½.....

*Premium, 25 per cent.

†Bruto weight.

Customs tariff of Honduras—Continued.

Number.	Tariff classification.	Unit.	Duty.	*Equivalent in United States money.
38	Jewelry:			
	Gold	Pound	\$1. 50	\$1 20
	Duble	do	.50	40
39	Lamps	do	.04	0 03 $\frac{1}{2}$
40	Lead	do	.04	03 $\frac{1}{2}$
	Manufactures	do	.12	09 $\frac{3}{4}$
41	Leather	do	.12	09 $\frac{3}{4}$
	Manufactures	do	.30	24
42	Lime and cement		Free	
43	Malt liquors	Pound	.08	06 $\frac{3}{4}$
44	Medical instruments	do	.12	09 $\frac{3}{4}$
45	Naval stores:			
	Rosin	do	.92	01 $\frac{3}{4}$
	Tar	do	.02	01 $\frac{3}{4}$
	Turpentine and pitch	do	.02	01 $\frac{3}{4}$
46	Oil-cakes and meal	do	.02	01 $\frac{3}{4}$
47	Oils:			
	Animal	do	.02	01 $\frac{3}{4}$
	Mineral	do	.02	01 $\frac{3}{4}$
	Vegetable	do	.02	01 $\frac{3}{4}$
48	Paraffine and wax:			
	Paraffine	do	.02	01 $\frac{3}{4}$
	Wax	do	.18	14 $\frac{3}{4}$
49	Paints	do	.02	
50	Paper, manufactures, according to quality	do	4, 8, 12 to .24 cents.	3 $\frac{1}{2}$, 6 $\frac{3}{4}$, 9 $\frac{3}{4}$ to 19 $\frac{1}{2}$ cents.
51	Plated ware	Pound	\$1. 50	\$1 20
52	Provisions:			
	Meats:			
	Fresh		Free	
	Salt	Pound	.02	01 $\frac{3}{4}$
	Oleomargarine	do	.04	03 $\frac{1}{2}$
	Lard	do	.04	03 $\frac{1}{2}$
	Butter	do	.04	03 $\frac{1}{2}$
	Cheese	do	.04	03 $\frac{1}{2}$
53	Quicksilver	do	.02	01 $\frac{3}{4}$
54	Seeds		Free	
55	Soap:			
	Common	Pound	.02	01 $\frac{3}{4}$
	Scented	do	.12	09 $\frac{3}{4}$
56	Spirits	do [†]	.08	06 $\frac{3}{4}$
57	Starch	do	.02	01 $\frac{3}{4}$
58	Sugar	do	.02	01 $\frac{3}{4}$
	Molasses	do	.02	01 $\frac{3}{4}$
59	Tin	do	.02	01 $\frac{3}{4}$
60	Tobacco:			
	Leaf	do	.50	40
	Cigars (Government monopoly)			
	Cigarettes	Pound	.80	64
61	Vegetables		Free	
62	Wood		Free	
	Manufactures	Pound	.02	01 $\frac{3}{4}$
63	Wool	do	.04	03 $\frac{1}{2}$
64	Zinc	do	.02	01 $\frac{3}{4}$

* Premium 25 per cent.

† Bruto weight.

NICARAGUA.

Customs tariff of Nicaragua.

[Prepared by Consul Charles H. Wills.]

No.	Tariff classification.	Tariff rates of duty.*	Equivalent in U. S. money.†
1	Agricultural implements: Hand-pumps for wells and tanks, hydraulic pumps, garden tools, hydraulic lime and Portland cement, cultivators, plows, fencing wire, and accessories; shellers, harrows, presses, seeds of all kind, guano and other manure, all sorts of machinery or parts thereof, mills of any kind, iron tanks for water, pruning shears, lime and quicklime.	Free	.....
2	Animals, alive or stuffed, or otherwise prepared.	Free	.....
3	Art work: Stationery.	\$0. 09	\$0. 062
	Paintings, lithographs, or photos, loose or in frames, with or without glasses.	. 60	. 414
4	Barks and extracts: If medicines and drugs.	. 18	. 124
	Cork-bark and goods thereof.	. 12	. 083
5	Blacking to black boots and other things, also varnishes.	. 09	. 062
6	Bones, hoofs, and horns (of no use or value in this country): Common buttons.	. 30	. 207
	Other goods manufactured.	. 48	. 33
	Ivory goods.	1. 80	1. 24
	Tortoise-shell goods.	2. 40	1. 66
7	Books, maps, engravings.	Free	.....
	Pictures on paper (saints, &c.)	. 15	. 104
8	Brass, and all goods thereof.	. 15	. 104
9	Breadstuffs: All sorts of grain.	Free	.....
	Bread, biscuits, and all paste, as macaroni.	. 03. 6	. 0248
	Flour.	. 01. 2	. 00828
	Linseed.	. 06	. 0414
10	Bricks.	.....	.....
11	Brooms.	. 03	. 02
	Brushes of all kinds.	. 30	. 207
12	Candles: Sperm, tallow, or composition.	. 09	. 062
13	Carriages, carts, and wheelbarrows.	. 09	. 062
14	Cars, railroad and steam, would have to pay duties as above, but any enterprising corporation will get permit to bring in free.	.....	.....
15	Chemicals: Ethereic oils.	6. 00	4. 14
	Enamel.	. 90	. 62
	Cochineal.	. 30	. 207
	All other preparations, drugs, extracts, gums, and oils.	. 18	. 124
	Carbonate of lime, Spanish whiting, bleaching lime, and natron.	. 09	. 062
	Saltpetre.	. 06	. 0414
	Epsom and Glauber salts.	. 03	. 02
	Table salt.	. 01. 2	. 00828
16	Clocks, all kinds.	. 15	. 1035
	Watches, gold and silver.	12. 00	8. 28
	Watches, imitation gold and silver, and nickel.	6. 00	4. 14
17	Coal, fossil, and animal.	Free	.....
18	Copper: Ingots, bars, and sheets.	. 09	. 062
	Manufactured.	. 18	. 124
	Still, but only with special permit.	Free	.....
	Percussion caps.	. 30	. 208
	Cartridges, only upon special permit.	. 30	. 208
19	Cotton: Raw, with or without seeds.	. 03	. 02
	Canvas for worsted.	. 02. 4	. 01656
	Thread for wicks or weaving.	. 09	. 062
	Gray cloth, brown cloth, unbleached.	. 09. 6	. 662
	Cosin, denims, sail-cloth.	. 15	. 104
	Damasks, blankets, rugs, towels, all brocaded weft, bleached cotton cloth (white goods), shirting, sheeting, drillings, pique, satin for men's wear, gingham, zephyrs, and similar stuffs, cotton bags; thread, white or colored.	. 18	. 124
	Ribbons and tapes of all kind.	. 24	. 166
	Beaverteen and mole-skin.	. 27	. 1863

* Per Spanish pounds. All duties paid upon gross weight. No tare of any kind allowed. 100 English pounds equal to 101.6 Spanish pounds.

† Per English pound.

Customs tariff of Nicaragua—Continued.

No.	Tariff classification.	Tariff rates of duty.	Equivalent in U. S. money.
19	Cotton—Continued.		
	Satins, brocaded stuff for ladies' wear.	\$0. 30	\$0. 208
	Hose and similar make of any kind.	. 30	. 208
	Common and fine prints, linings, and badanas.	. 24	. 166
	Italian cloth; gambroons for ladies, lawns, bookmuslins; plain, embroidered, white, or colored; muslin, printed, white, colored, or brocaded.	. 36	. 248
	Embroidered handkerchiefs of any kind, and shirts and under- shirts; breasts, collars and cuffs; pantaloons, coats, vests, draw- ers, white or colored, plain or trimmed, for men or women; corsets, cotton-plush, velveteen or similar stuffs, belts, sus- penders, &c.	. 42	. 29
	Shirts with linen breasts and fronts, also common trimming braids.	. 60	. 414
	Fringes, tulle, ladies' patterns in cuts; curtain nets and all sorts of trimming.	. 72	. 497
	Laces, embroidery, edging.	. 90	. 621
20	Earthen, stone, and china ware.	. 018	. 0124
21	Fertilizers.	Free	
22	Fish and meats of all sorts for food, derived from the animal king- dom, dry or preserved.	. 09	. 062
23	Flax, hemp, and jute:		
	Oakum.	. 024	. 0166
	Jute, gunny or hemp bags.	. 03	. 028
	Saddlebags, hammocks, or similar articles made of fiber.	. 06	. 0414
	Cords and lines; ropes of any kind.	. 06	. 0414
	Threads of all kind; sail-cloth, canvas for cots and stretchers.	. 18	. 124
	Table-cloths, napkins, towels, and all brocaded stuff in pieces.	. 24	. 166
	Coarse linen stuffs, bleached and unbleached; sheeting and all drillings.	. 30	. 208
	Fine and plain linen cloth, lawns, batist, handkerchiefs and shawls, plain and brocaded.	. 72	. 497
	Shirts, fronts, collars and cuffs, white or colored; ready-made clothing for ladies and gentlemen; laces, fringes, and all kind of trimmings.	. 120	. 828
	(Cotton goods mixed with linen or hemp pay duties as linen goods.)		
	Straw hats for men or children.	. 36	. 248
	Panama-hats.	4. 80	\$3 31
24	Fruits:		
	Olives and vegetables preserved, all kinds.	. 036	. 0248
	Almonds, nuts; all fresh and dry fruit, evaporated or preserved in sugar or honey, sweet spirit, or any sweet liquor.	. 09	. 062
25	Furs (in the tropics none used) would go as skins.	. 24	. 162
26	Glass in sheets, bottles:		
	Drinking glasses and lamp tubes.	. 06	. 0414
	Candelabra, lusters, flower-vases, and such like.	. 12	. 0828
	Physical, chirurgical, and chemical.	Free	
	Looking-glasses, all kinds.	. 15	. 104
27	Glucose, as sugar of all kinds.	. 048	. 033
28	Glue.	. 072	. 0497
29	Gunpowder:		
	Importation prohibited. (Government monopoly.)		
	Explosives for mines only with special permit by the Govern- ment.	. 60	. 414
30	Hair:		
	Hog and horse hair.	. 06	. 0414
	For ladies' and gentlemen's wear.	. 36	. 248
31	Hay. (None used here.)		
32	Hides and skins. (None are imported as skins, but could go as dry animal skin.)		
33	Honey, as sweets.	. 15	. 104
34	Hops, as drugs.	. 18	. 124
35	Ice. Not mentioned in the list.		
36	India-rubber goods:		
	India-rubber and gutta-percha made up, no admixture of any kind, and boot elastics.	. 48	. 332
	Rubber and such like mixed with linen, cotton, or hemp, table- covers and india-rubber overcoats.	. 24	. 166
37	Iron and steel:		
	All sorts of machinery.	Free	
	Guns and cannons for troops. (Prohibited.)	. 012	
	Ingots or plates.		. 00828
	Manufactured tools.	. 03	. 027
	Shovels and spades.	. 06	. 0414
	Buckles for pants, saddles, harness and similar use.	. 09	. 062
	All manufacured goods by tinsmiths.	. 09	. 062

Customs tariff of Nicaragua—Continued

No.	Tariff classification.	Tariff rates of duty.	Equivalent in U. S. money.
37	Iron and steel—Continued.		
	Furniture	\$0.12	\$0.0828
	Machetes and bush-knives and swords, with or without sheath	.15	.104
	Common percussion guns, smooth-bore	.15	.104
	Pen-holders, pens, pencils, and pencil-cases	.18	.124
	Precision and repeating rifles, rifled barrels, or with special permit of the Government	.30	.207
	Measures and rules for all trades, knives, penknives, razors, scissors, shears, and knives for table use, and such-like goods	.45	.315
	Pins, hooks and eyes, and fish-hooks, of any kind and metal	.75	.5175
	Buttons made of any kind of metal, swords and sabres, with sheaths, buckles for braces and belts of any kind	.90	.62
	Pistols and revolvers	1.50	1.035
38	Jewelry:		
	Fans of any kind	.90	.62
	Gold and silver imitation of jewelry	6.00	4.14
	Imitation of jet, coral, or pearls, of any material	.90	.62
	Solid gold and silver jewels, also gold and silver watches	12.00	8.28
	Jewelry, with precious stones	21.00	14.50
	Brilliant, pearls, and precious stones, alone	36.00	24.84
	Coral, raw and manufactured	4.80	3.32
	Imitations of precious stones	1.20	.827
39	Lamps, candelabra, lustres, lamps and lanterns, of all kinds	.15	.104
40	Lead, raw and manufactured	.048	.0332
41	Leather, of any kind	.24	.166
	Bellows, all kinds	.18	.124
	Leather and skins, manufactured	.45	.31
	Ordinary and common shoes and boots	.48	.332
	Shoes and boots for gentlemen, and whips	.60	.414
	Shoes and boots for ladies	.75	.5175
	Gloves	1.20	.827
42	Lime and cement	Free	.....
	Plaster of Paris and chalk	.019	.0124
43	Malt liquors:		
	Beer	.03	.022
	Vinegar	.024	.0166
44	Medical instruments	Free	.....
45	Naval stores, all kinds	.024	.0166
46	Oil-cake and meal, as fertilizers	Free	.....
47	Oils, animal and vegetable:		
	Raw	.42	.29
	Perfumed	.12	.083
	Mineral, and all composition used for lighting	.012	.00827
48	Paraffine and wax, raw and manufactured	.18	.124
49	Paints and colors, all	.06	.0414
	Ink, for writing	.024	.0166
50	Paper and cardboard	.03	.027
	Paper for periodicals, if not under size, 29 by 20, and lined for music	Free	.....
	Blank books of all kinds	.06	.0414
	Glass and emery paper	.18	.124
	Wall-paper, trimmings, and dolls	.30	.207
	Playing cards	.48	.332
	Fans, and anything used for material in artificial flower making	.90	.62
	Masks of any kind	1.20	.827
51	Plated ware, as gold and silver ware:		
	From	6.00	4.14
	To	12.00	8.28
52	Provisions:		
	Meats, fresh and salt	.09	.062
	Oleomargarine, lard, butter, cheese, tallow, and all animal fats	.06	.0414
	Animal fats, perfumed	.12	.088
53	Quicksilver	Free	.....
54	Seeds	Free	.....
	Only linseed	.06	.0414
55	Soap:		
	Common	.024	.0166
	Perfumed	.12	.0827
56	Spirits, Government monopoly:		
	Pay, if above 12° to 25° Carthier, each bottle	.48	.332
	About 6 of these bottles to the imported gallon, with special permit of the Government; if more than 25° Carthier as allowed, each bottle has then to pay extra \$0.036 for each degree additional		
57	Starch, as sago and maizena	.06	.0414
58	Sugar and molasses	.048	.0332
	Confection, and all kinds of sweets	.15	.104
59	Tin bars and plates	.06	.0414
	Manufactured	.12	.0828

Customs tariff of Nicaragua—Continued.

No.	Tariff classification.	Tariff rates of duty.	Equivalent in U. S. money.
60	Tobacco, Government monopoly: Importation prohibited, and only Havana tobacco allowed by special permit.	\$1.20	\$0.827
	Chewing tobacco (allowed).....	.60	.414
61	Vegetables, preserved.....	.033	.0248
62	Wood:		
	For machinery and church organs.....	Free	
	Lumber for building and barrels.....	.006	.00414
	Pails, tubs, and molds.....	.024	.0166
	Sulphur matches.....	.06	.0414
	Furniture, pianos, and organs.....	.12	.0828
	Musical instruments, other kind.....	.18	
	Pencils.....	.18	.124
	Carriages, carts, and wheelbarrows.....	.09	.062
	Mouldings, frames, and smoking pipes, of any kind and material.....	.24	.166
	Billiards.....	.36	.2484
	Buttons.....	.30	.207
	Chess, drawing-boards, dominoes, and kanes.....	.60	.414
	Fans.....	.90	.62
63	Wool, only manufactured imported:		
	Alpaca, merino, or any other light fabric of wool, gloves, hose of all kind, shirts of all kinds.....	.60	.414
	Rugs, and dyed sheepskins with wool on.....	.60	.414
	Cassimeres, broadcloth, serge, and flannels.....	.75	.5175
	Carpets, tablecloths, and curtains.....	.42	.29
	Blankets, rugs, pouches.....	.24	.1656
	Saddlecloths.....	.30	.207
	Common wool stuffs, homespuns.....	.42	.29
	Thread for sewing and embroidering hats for ladies, of all kinds, and wool hats for men.....	.72	.497
	Brocaded stuff in pieces, fringes, laces, handkerchiefs, ladies scarfs, and shawls.....	1.20	.828
	Tape, ribbons, and braid.....	.75	.5145
	Pants and clothing for men, ready-made.....	.90	.62
	Lawns, nets, muslins, or any other fine stuff for ladies.....	1.80	1.24
	Ladies dresses made up, or in fancy cuts.....	3.00	2.07
	Goods mixed with wool, cotton or linen pay duties as woolen goods.		
64	Zinc:		
	Bars and plates.....	.06	.0414
	Manufactured.....	.12	.0828
	Not mentioned in circular but dutiable:		
	Bitters of any kind, to mix drinks.....	.24	.166
	Bricks.....	.012	.00828
	Building stones.....	.006	.00414
	Cacao and coffee, manufactured.....	.12	.0828
	Cologne water.....	.09	.062
	Feather-beds and pillows.....	.42	.29
	Feather-dusters and feathers for trimmings.....	.90	.62
	Fireworks.....	.15	.104
	Florida-water.....	.09	.062
	Flowers, artificial, or any material to make them.....	.90	.62
	Fusees, to light pipes and cigars.....	.30	.207
	Metal threads and powders.....	.90	.62
	Metal, spun, for church ornaments, or military uniforms.....	1.20	.828
	Marble, raw.....	.012	.0828
	Mineral and gaseous waters and acidulated drinks.....	.024	.0166
	Perfumery of all kinds.....	.12	.0828
	Palm, and rattan split, &c.....	.06	.0414
	Sealing wax and wafers.....	.30	.207
	Slates.....	.006	.00414
	Spectacles, if not in gold or silver.....	1.20	.828
	Spices of all kind.....	.048	.0332
	Sponges.....	1.20	.828
	Strings for instruments.....	.75	.5175
	Silk:		
	Threads of any kind.....	2.40	1.66
	All manufactured, or goods mixed with silk.....	3.00	2.07
	Umbrellas and sunshades:		
	Cotton.....	.30	.207
	Silk and other stuff.....	.60	.414
	Water-filters.....	.03	.207
	Wines.....	.048	.0332
	Whalebone, raw and manufactured.....	.48	.332
	Whetstones and flints.....	.03	.027

SALVADOR.

NOTE BY CONSUL.—On the appraisement given in the tariff 52 per cent. is paid in money and 20 per cent. in Government paper, which is at present (June, 1886) bought at much below par; besides this there are small taxes levied on the weight and bulk of merchandise that passes through the custom-house, and which are collected for the charitable institutions of the country.

Tariff on products and manufactures of the United States.

[Prepared by Consul J. Maurice Duke.]

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
1	Agricultural implements, 5 per cent. ad valorem.....	.....	.....	.....
2	Animals of any kind, 5 per cent. ad valorem.....	.....	.....	.....
3	Art works, 5 per cent. ad valorem.....	.....	.....	.....
4	Bark, and extracts.....	Pound.....	\$2. 00	\$1. 502
5	Blacking.....	do.....	. 10	. 0751
6	Bones, hoofs, horns, &c., not rated.....	.....	.....	.....
7	Books, maps, engravings, &c., 5 per cent. ad valorem.....	.....	.....	.....
8	Brass, and manufactures of.....	Pound.....	. 38	. 28538
9	Breadstuffs:			
	Barley:			
	In the husk.....	do.....	. 02	. 01502
	Without the husk.....	do.....	. 03	. 02253
	Bread, not rated.....	.....	.....	.....
	Biscuits, gross weight.....	Pound.....	. 04	. 03004
	Biscuits, fine, gross weight.....	do.....	. 10	. 0751
	Indian corn.....	Free.....	.....	.....
	Oats, not rated.....	.....	.....	.....
	Rye, not rated.....	.....	.....	.....
	Wheat.....	Pound.....	. 02	. 01502
	Flour.....	do.....	. 03	. 02253
10	Bucks (lye).....	do.....	. 04	. 03004
11	Brooms.....	Dozen.....	2. 00	1. 502
	Brushes:			
	Tooth.....	do.....	. 04	. 3004
	Ivory or tortoise shell.....	do.....	2. 00	1. 502
	Shoe.....	do.....	. 70	. 5257
	Clothes.....	do.....	4. 00	3. 004
	Hair.....	do.....	3. 00	2. 253
	Nail.....	do.....	1. 00	. 751
	Shaving.....	do.....	2. 00	1. 502
	Scrubbing.....	do.....	1. 00	. 751
	Horse.....	do.....	2. 00	1. 502
12	Candles.....	Pound.....	. 08	. 06008
13	Carriages:			
	Two wheels.....	Each.....	120. 00	90. 12
	Four wheels.....	do.....	200. 00	150. 20
14	Cars of any kind, 5 per cent. ad valorem.....	.....	.....	.....
15	Chemicals:			
	Acids:			
	Benzoic.....	Pound.....	5. 60	4. 2056
	Chromic.....	do.....	6. 40	4. 8064
	Chrysophanic.....	do.....	6. 40	4. 8064
	Formic.....	do.....	6. 40	4. 8064
	Gallic.....	do.....	12. 00	9. 012
	Hydrochloric.....	do.....	1. 00	. 0751
	Salicylic.....	do.....	2. 00	1. 502
	Tannic and prussic.....	do.....	4. 00	3. 004
	Acetic, muriatic, nitric, oxalic, and sulphuric.....	do.....	. 10	. 0751
	Aconitin, digitalin, and myriein.....	do.....	1. 60	1. 2016
	Aloin.....	do.....	16. 00	12. 016
	Alum.....	do.....	. 04	. 03004
	Ambergris.....	do.....	212. 00	159. 212
	Ammonium, arsenate, benzoate, bromide, hypo-phosphite, salicylate, valerianate, and iodide of.....	do.....	6. 40	4. 8064
	Ammonia, liquid or in salt, not denominated.....	do.....	. 20	. 1502
	Apiol.....	do.....	12. 80	9. 6128

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
15	Chemicals—Continued.			
	Apomorphia.....	Pound.....	\$24. 00	\$18. 024
	Arsenic.....	do.....	.20	.1502
	Atropia, and its preparations.....	do.....	48. 00	36. 048
	Borax or tincal.....	do.....	.25	.18775
	Barium:			
	Muriate, nitrate, or acetate.....	do.....	.50	.3755
	Carbonate or chlorate.....	do.....	1. 20	.9012
	Salts, not denominated.....	do.....	.20	.1502
	Berries, juniper.....	do.....	.10	.0751
	Berberina.....	do.....	32. 00	24. 032
	Bismuth, valerianate, citrate, subnitrate, and tan- nate.....	do.....	4. 00	3. 004
	Bole, Armenian.....	do.....	.20	.1502
	Bromine.....	do.....	11. 20	8. 4112
	Bromide of potassium.....	do.....	3. 00	2. 253
	Bromide, not denominated.....	do.....	1. 00	.751
	Bark:			
	Peruvian, calisaya, or cascarilla.....	do.....	1. 00	.751
	Peru, other sorts.....	do.....	.25	.18775
	Camphor.....	do.....	.40	.3004
	Camphor, monobromated.....	do.....	4. 80	3. 6048
	Cadmium, metallic.....	do.....	4. 00	3. 004
	Caffeine and its salts.....	do.....	32. 00	24. 032
	Cantharides.....	do.....	3. 00	2. 253
	Cantharides, powdered.....	do.....	4. 00	3. 004
	Cantharidin.....	do.....	80. 00	60. 008
	Copperas.....	do.....	.04	.03004
	Carbonate of soda and potash.....	do.....	.15	.11265
	Chloroform.....	do.....	1. 00	.0751
	Castoreum.....	do.....	9. 60	7. 2096
	Chloride of lime (dry).....	do.....	.10	.751
	Codeia.....	do.....	192. 00	144. 192
	Chloral.....	do.....	4. 50	3. 3795
	Conia.....	do.....	160. 00	120. 16
	Collodin.....	do.....	1. 60	1. 2016
	Cinchonia.....	do.....	16. 00	12. 016
	Cubebia.....	do.....	96. 00	72. 096
	Chalk.....	do.....	.02	.01502
	Cacao, butter of.....	do.....	.70	.5257
	Delphinia and digitaline.....	do.....	192. 00	144. 192
	Dyes, not denominated.....	do.....	.65	.48815
	Elaterium.....	do.....	32. 00	24. 032
	Emetia.....	do.....	20. 00	15. 02
	Ergotine.....	do.....	32. 00	24. 032
	Eserine.....	do.....	480. 00	360. 48
	Ether, valerianic.....	do.....	16. 00	12. 016
	Ethyl, iodide, and bromide.....	do.....	16. 00	12. 016
	Eucalyptus.....	do.....	16. 00	12. 016
	Extracts:			
	Solid, carmab, indic, coca, eucalyptus, calabar beans, monesia, nux vomica, and opium.....	do.....	10. 00	7. 51
	Not denominated.....	do.....	2. 00	1. 592
	Flor de alucema (disinfectant).....	do.....	.10	.0751
	Gum:			
	Arabic.....	do.....	.25	.18775
	Powdered.....	do.....	.50	.3755
	Gum-lac and asafetida.....	do.....	.30	.2253
	Gold, preparations simple or compound.....	do.....	128. 00	96. 128
	Iron:			
	Reduced by hydrogen.....	do.....	2. 00	1. 502
	Powdered or purified.....	do.....	.50	.3755
	Arsenate.....	do.....	9. 60	7. 2096
	Lactate.....	do.....	4. 00	3. 004
	Tartrate.....	do.....	.80	.6008
	Valerianate.....	do.....	5. 00	3. 755
	Iodide of iron, arsenic, sulphur, magnesium, potas- sium, sodium, lead, and zinc.....	do.....	4. 00	3. 004
	Iodides and iodines, &c., not denominated.....	do.....	4. 80	3. 6048
	Iodide of mercury, proto. and bi.....	do.....	8. 00	6. 008
	Iodoform.....	do.....	8. 00	6. 008
	Jalap.....	do.....	25. 60	19. 2256
	Kermes' mineral (antimony).....	do.....	2. 00	1. 502
	Koosso, flowers or in powder.....	do.....	2. 00	1. 502
	Lupulin.....	do.....	3. 00	2. 253
	Lactucarium.....	do.....	2. 00	1. 502
	Litharge.....	do.....	.15	.11265
	Lye (concentrated).....	do.....	.04	.03004
	Linseed (raw or ground).....	do.....	.06	.04506

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
15	Chemicals—Continued.			
	Lactopeptine	Pound	\$9.60	\$7.2096
	Lithium	do	8.00	6.008
	Musk:			
	Tonquin	do	240.00	180.24
	Canton	do	64.00	48.064
	Minium	do	.10	.0751
	Manganese:			
	Metallic	do	32.00	24.032
	Borate	do	.30	.2253
	Chloride	do	1.80	1.3518
	Sulphate	do	6.00	4.506
	Iodide	do	12.80	9.6128
	Magnesium:			
	Calcined and carbonate	do	.20	.1502
	Lacto-phosphate and valerianate	do	16.00	12.016
	Narcotina	do	32.00	24.032
	Oil:			
	Sesame seed and similar	do	.10	.0751
	Cod-liver, in tins	do	.10	.0751
	Animal (Dippal's)	do	.80	.6008
	Croton "tiglio"	do	4.00	3.004
	Cubeb and copaiba	do	.50	.3755
	Resinous and ergot "de caprecina"	do	10.00	7.51
	Ginger	do	10.00	7.51
	Almonds, bitter	do	12.00	9.012
	Cassia	do	2.00	1.502
	Cinnamon	do	30.00	22.53
	Oils:			
	Essential:			
	Roses	do	80.00	60.08
	Geranium	do	25.00	18.775
	Verbena and valerian	do	20.00	15.02
	Neroli	do	32.00	24.032
	Patchouly	do	16.00	12.016
	Camomila	do	32.00	24.032
	Opium:			
	In paste	do	6.00	4.506
	Powdered	do	8.00	6.008
	Liquid or laudanum	do	1.00	.751
	Ochers	do	.04	.03004
	Plasters of all kinds	do	1.00	.751
	Phosphorus	do	3.00	2.253
	Pastilles:			
	Medicinal or santonino	do	2.00	1.502
	Of ipecacuanha	do	1.00	.751
	Pitch:			
	Burgundy	do	.10	.0751
	Castile	do	.06	.04506
	Platina, salts of	do	96.00	72.096
	Pilocarpine	Per grain	.15	.11265
	Propylamine	Per pound	16.00	12.016
	Plumbago	do	.06	.04506
	Quinia, and its preparations not denominated	do	16.00	12.016
	Spirits:			
	Turpentine	do	.15	.11265
	Aromatic and medicinal	do	.25	.18775
	Sulphur	do	.06	.04506
	Strychnine, morphine, and hellebore	do	64.00	48.064
	Scammony (Aleppo)	do	4.00	3.004
	Sirups, medicinal, gross weight	do	.12	.09012
	Silver, preparations of	do	14.40	10.8144
	Salts:			
	Glauber	do	.10	.0751
	Epsom	do	.04	.03004
	Santonin	do	16.00	12.016
	Seeds, medicinal	do	.16	.12016
	Soda, caustic	do	.04	.03004
	Sodium	do	2.00	1.502
	Salicin	do	12.80	9.6128
	Salts and oxide of mercury not expressed	do	1.00	.0751
	Sulphate of copper and alumina	do	.10	.0751
	Soda, arsenate, benzoate, salicylate, and valerianate	do	8.00	6.008
	Tannin	do	4.00	3.004
	Tartar emetic	do	1.00	.751
	Turpentine	do	.20	.1502
	Turpentine, Venice	do	.50	.3755
	Turpentine, Tridacio	do	5.00	3.755
	Urea	do	16.00	12.016
	Verdigris, acetate of copper	do	.30	.2253

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
15	Chemicals—Continued.			
	Vermilion:			
	China	Per pound ..	\$1. 40	\$1. 0514
	Common	do	. 60	. 4506
	Waters:			
	Mineral	do	. 04	. 03004
	Distilled medicinal not expressed	do	. 25	. 18775
	Wines, medicinal	do	. 12	. 09012
	Zinc, bromide, cyanide, ferrocyanide, phosphide, valerianate, lactate, and sulphocarbolate	do	4. 80	3. 6048
16	Clocks:			
	Tower	Each	100. 00	75. 10
	Metal	Inch	. 50	. 3755
	Wooden	do	. 25	. 18775
	Watches, 10 per cent. ad valorem			
17	Coal, 5 per cent. ad valorem			
18	Copper:			
	Ore, not rated			
	Sheets and bars, gross weight	Pound	. 15	. 11265
	Nails, gross weight	do	. 38	. 28538
	Wares	do	. 38	. 28538
19	Cotton:			
	Raw, not rated			
	Antimacassars, 30 inches long	Dozen	4. 00	3. 004
	Arabias, 36 inches	Yard	. 12	. 09012
	Artificial flowers	Pound	5. 00	3. 755
	Bandanas, 36 inches wide	Yard	. 08	. 06008
	Bands	Dozen pairs ..	. 25	. 18775
	Cloths:			
	45 inches long	Dozen	2. 00	1. 502
	White and cambric, 28 inches	Yard	. 05	. 03775
	White and cambric, 32 inches	do	. 07	. 05257
	White and cambric, 40 inches	do	. 08	. 06008
	Canvas, 30 inches wide	do	. 05	. 03775
	Carpeting	Square piece ..	. 05	. 03775
	Costumes	Each	2. 00	1. 502
	Not made up	do	1. 50	1. 1265
	For children	do	1. 50	1. 1265
	Cuffs, for shirts	Dozen pairs ..	1. 40	1. 0514
	Drill:			
	32 inches	Yard	. 09	. 06759
	Linen mixed with cotton, 32 inches	do	. 15	. 11265
	Linen mixed with cotton, fine, 32 inches	do	. 30	. 2253
	Drawers	Dozen	4. 00	3. 004
	Dimity:			
	32 inches	Yard	. 18	. 13518
	Quilted	do	. 40	. 3004
	Damask:			
	28 inches width	do	. 15	. 11625
	Mixed with wool	do	. 35	. 26285
	Embroidery	Pound	1. 50	1. 1265
	Frock coats	Each	2. 50	1. 8775
	Jackets	do	1. 50	1. 1265
	Garters	Dozen	. 70	. 5257
	Garters for children	do	. 40	. 3004
	Gloves	Dozen pairs ..	1. 00	. 0751
	Gloves for children	do	. 50	. 3755
	Gauze	Yard	. 10	. 0751
	Holland, mixed with linen, 36 inches width	do	. 25	. 18775
	Handkerchiefs:			
	18 inches	Dozen	. 30	. 2253
	28 inches	do	. 50	. 3755
	36 inches	do	. 75	. 56325
	Lawn:			
	40 inches width	Yard	. 12	. 09012
	Bordered with wool or silk	do	. 15	. 11265
	Lace:			
	33 inches width	do	. 12	. 09012
	Bordered, &c	do	. 16	. 12016
	Muslins:			
	28 inches width	do	. 06	. 04506
	36 inches width	do	. 08	. 06008
	Mixed with wool	do	. 16	. 12016
	Padding	Pound	. 25	. 18775
	Packing-cloth, linen mixed with cotton, 36 inches	Yard	. 06	. 04506
	Prints:			
	24 inches	do	. 05	. 03775
	36 inches	do	. 08	. 06008
	Shirtings:			
	26 inches	do	. 05	. 03775

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
19	Cotton—Continued.			
	Shirtings:			
	30 inches	Yard	\$0. 06	\$0. 04506
	36 inches	do	. 07	. 05257
	Drill, 36 inches	do	. 08	. 06008
	Shawls:			
	Lace	Dozen	12. 00	9. 012
	Small size	do	8. 00	6. 008
	Ordinary	Each	2. 00	1. 502
	China silk	Dozen	. 50	. 3755
	China silk, large	do	5. 00	3. 755
	China crepe	Each	1. 50	1. 1265
	Sashes, &c.	Dozen	1. 50	1. 1265
	Sashes mixed with wool	do	2. 00	1. 502
	Skirts	do	13. 00	9. 012
	Sail-cloth	Yard	. 25	. 18775
	Surplices	Each	4. 00	3. 004
	Socks:			
	For men	Dozen	1. 00	. 751
	For children	do	. 50	. 3755
	Mixed with wool	do	. 80	. 6008
	Stockings:			
	Sewn	do	1. 75	1. 31425
	Unsewn	do	3. 00	2. 253
	For women	do	3. 00	2. 253
	Sewn	do	1. 00	. 751
	For children	do	. 50	. 3755
	Shirts	do	5. 00	3. 755
	Shirts with linen collars and cuffs	do	8. 00	6. 008
	Scarfs	do	18. 00	13. 518
	Thread	Pound	. 50	. 3755
	Thread on reels, 100 yards	Gross	1. 00	. 751
	Tassels	Pound	. 60	. 4506
	Twine. (See under Flax, &c.)			
	Undershirts	Dozen	3. 00	2. 253
	Undershirts mixed with wool	do	4. 50	3. 3795
	Umbrellas:			
	36 inches	do	3. 50	2. 6285
	20 inches	do	2. 50	1. 8775
	Vests	do	12. 00	9. 012
	White spreads:			
	2 yards	Each	. 50	. 3775
	3 yards	do	1. 00	. 751
	Wraps	Pound	2. 00	1. 502
	Wrappers	Each	6. 00	4. 0506
	Yarn	Pound	. 04	. 03004
	Yarn, red or purple	do	. 12	. 09012
	Yarn, other colors	do	. 06	. 06008
20	Earthen, stone, and china ware:			
	Ordinary, gross weight	do	. 06	. 04506
	Imitation porcelain, gross weight	do	. 08	. 06008
	Fancy ware, gross weight	do	. 20	. 1502
21	Fertilizers, not rated.			
22	Fish:			
	In tins, gross weight	do	. 15	. 11265
	Dried or salt, gross weight	do	. 10	. 0751
23	Flax, hemp, and jute:			
	Common drill, mixed with cotton	Yard	. 15	. 11265
	Fine drill, mixed with cotton	do	. 30	. 2253
	Canvas	do	. 05	. 03755
	Twine, gross weight	Pound	. 20	. 1502
24	Fruits:			
	Preserved in brandy or water, gross weight	do	. 10	. 0751
	Dried, gross weight	do	. 10	. 0751
	Fresh, gross weight	do	. 05	. 03755
	Shelled almonds	do	. 25	. 18775
25	Furs	Pound	1. 00	. 75
26	Glass:			
	Beads, gross weight	do	. 50	. 3755
	Colored or ornamental, gross weight	do	. 06	. 04506
	Glasses, cups, vases, &c., gross weight	do	. 12	. 09012
	Sheet, gross weight	do	. 03	. 02253
	For watches	Dozen	. 50	. 3755
27	Glucose, gross weight	Pound	. 10	. 0751
28	Glue, gross weight	do	. 05	. 03755
29	Gunpowder. (Prohibited.)			
30	Hair:			
	Human, gross weight	Pound	7. 00	5. 257
	Imitation, gross weight	do	3. 00	2. 253
31	Hay. (Not rated.)			

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
32	Hides, gross weight	Pound	\$0. 30	\$0. 2253
	Skins, gross weight	do	.50	.3755
33	Honey, gross weight	do	.10	.0751
34	Hops, gross weight	do	.16	.12016
35	Ice	Free .....	.....	.....
36	India-rubber manufactures	Pound	.50	.3755
37	Iron and steel:			
	Bar and sheet iron, gross weight	do	.03	.02253
	Buckets	Dozen	8. 00	6. 008
	Buckles	Gross	.80	.6008
	Bells for houses	Pound	.20	.1502
	Beds, gross weight	do	.06	.04506
	Beds with bronze, gross weight	do	.25	.18775
	Chains, gross weight	do	.06	.04506
	Cast iron for agricultural and domestic use, gross weight	do	.06	.04506
	Forged iron and in parts for domestic or other use, not denominated, gross weight	do	.16	.12016
	Guns:			
	Single-barrel	Each	2. 50	1. 8775
	Double-barrel	do	5. 00	3. 755
	Fine	do	6. 00	4. 506
	Fine double	do	12. 00	9. 012
	Breech-loaders	do	20. 00	15. 02
	Hooks and rings, gross weight	Pound	.20	.1502
	Nails (3-inch) and tacks, gross weight	do	.08	.06008
	Pumps for casks	Dozen	12. 00	9. 012
	Steel, gross weight	Pound	.06	.04506
	Tools and implements, gross weight	do	.07	.05257
	Tools and implements (fine), gross weight	do	.20	.1502
	Scales:			
	4-inch	Dozen	6. 00	4. 506
	8-inch	do	9. 00	6. 759
	12-inch	do	24. 00	18. 024
	18-inch	do	36. 00	27. 036
	With marble slabs	Each	6. 00	4. 506
	Safes and strong boxes, 25 inches in height	do	25. 00	18. 775
	Safes, large. (According to size.)			
	Wire, gross weight	Pound	.16	.12016
	Weighing machines:			
	To weigh 150 pounds	Each	6. 00	4. 506
	To weigh 250 pounds	do	10. 00	7. 51
	To weigh 500 pounds	do	20. 00	15. 02
	Screws, gross weight	Pound	.16	.12016
38	Jewelry:			
	Rings	Gross	.50	.3755
	Rings, fancy	do	3. 00	2. 253
	Ear-rings	Gross pairs	2. 00	1. 502
	Ear-rings, fancy	do	6. 00	4. 506
	Not denominated, 10 per cent. ad valorem .....		.....	.....
39	Lamps:			
	Table, of crystal, &c., gross weight	Pound	.30	.2253
	Of any metal, with or without glass, gross weight	do	.40	.3004
40	Lead:			
	In bars	Pound	.06	.04506
	In shot	do	.10	.0751
41	Leather:			
	Plain	Pound	.25	.18775
	Bridles with single reins	Dozen	7. 00	5. 257
	Bridles with double reins	do	10. 00	7. 51
	Reins	do	4. 50	3. 3795
	Harness for plow	Each	5. 00	3. 755
	Harness for carriage	do	10. 00	7. 51
	Saddles:			
	Common	do	15. 00	11. 265
	Fine	do	20. 00	15. 02
	For women	do	10. 00	7. 51
	Varnished, for shoes, &c.	Pound	.30	.2253
	Shoes	Pair	2. 50	1. 8775
	For children	do	1. 00	.751
42	Lime and cement	Quintal	.50	.3755
43	Malt liquors:			
	Beer	Doz. bottles	2. 00	1. 502
	Beer in barrels	Gallon	.50	.37559
44	Medical instruments:			
	Not denominated, 5 per cent. ad valorem .....		.....	.....
	Catheters, metal	Dozen	8. 92	6. 69892
	Catheters, gutta-percha	do	2. 94	2. 20794

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
45	Naval stores:			
	Rosin, gross weight	Pound	\$0.02	\$0.01502
	Tar, gross weight	do	.02	.01502
	Pitch, gross weight	do	.02	.01502
	Turpentine, gross weight	do	.20	.01502
46	Oil cake and meal. (Not rated.)			
47	Oils:			
	Animal	Gallon	.37	.27787
	Olive, in bottles 15 to 18 ounces, cases of 12 bottles	Case	2.50	1.8775
	Olive, in casks, &c.	Gallon	.80	.6008
	Turnip	do	.80	.6008
	Linseed	do	.75	.56325
	Cocoanut	do	.37	.27787
	Whale	do	.80	.6008
	Mineral, gross weight	Quintal	3.00	2.253
48	Paraffine and wax:			
	Paraffine, gross weight	Pound	.05	.03755
	Wax, gross weight	do	.40	.3004
49	Paints:			
	Oil, gross weight	do	.06	.04506
	Dry, gross weight	do	.04	.03004
50	Paper:			
	Letter paper, ruled or not, 10 inches long	Ream	1.00	.751
	Letter paper, ruled or not, 15 inches long	do	1.60	1.2016
	Plain white (crown brand)	do	.80	.6008
	Plain white (foolscap)	do	1.20	.9012
	Linen paper	do	2.00	1.502
	Thin paper for cigarettes	do	2.00	1.502
	Thin paper for copying-presses	do	2.00	1.502
	Colored, for advertising	do	3.00	2.253
	Colored China, for flowers, &c.	do	6.00	.04506
	Gold or silver gilt	do	16.00	12.016
	Letter paper, with printed headings	do	8.00	6.008
	Letter paper, large size	do	20.00	16.02
	Brown wrapping paper	do	.72	.54072
	Printer's paper	do	4.00	3.004
	Drying paper	do	3.00	2.253
	Invoice, ruled	do	2.00	1.502
	Ticket or note	do	4.00	3.004
	Glazed	do	3.00	2.253
	Card:			
	Ordinary	Pound	3.00	.02253
	Fancy	do	.24	.08024
	Colored wall-paper	Roll	.20	.1502
	Colored wall-paper, with gilt	do	.60	.4506
	Wall-paper, with landscapes, and illuminations, &c.	Tira	.20	.1502
51	Plated ware, gross weight	Pound	1.50	1.1265
52	Provisions:			
	Fresh meat. (Not rated.)			
	Salt meat, gross weight	Pound	.10	.0751
	Oleomargarine. (Not rated.)			
	Lard, gross weight	Pound	.05	.03755
	Butter, gross weight	do	.10	.0751
	Cheese, gross weight	do	.10	.0751
53	Quicksilver, 5 per cent. ad valorem			
54	Seeds, 5 per cent. ad valorem			
55	Soap:			
	Common, gross weight	Pound	.10	.0751
	Fancy, gross weight	do	.25	.18775
56	Spirits	Doz. bottles	10.00	7.51
57	Starch, not rated			
58	Sugar and molasses, gross weight	Pound	.10	.0751
59	Tin:			
	In bars or sheets, gross weight	do	.16	.12016
	Prepared, for domestic, or other uses, gross weight	do	.20	.1502
	Painted or ornamental	do	.25	.18775
	Baths	Each	10.00	7.51
	Baths, sitz	do	4.00	3.004
60	Tobacco:			
	Leaf, gross weight	Pound	.25	.18775
	Cigars and cigarettes, gross weight	do	7.00	5.257
61	Vegetables:			
	Preserved, gross weight	do	.10	.0751
	Potatoes, gross weight	do	.02	.01502
62	Wood:			
	Timber for building purposes	1,000 feet	20.00	15.02
	Sofas:			
	Fancy wood	Each	25.00	18.775
	Plain	do	10.00	7.51

Tariff on products and manufactures of the United States—Continued.

Number.	Tariff classification.	Unit.	Duty.	Equivalent in United States money.
62	Wood—Continued.			
	Dressing tables:			
	Fancy	Each	\$30. 00	\$22. 53
	Plain	do	15. 00	11, 265
	Beds:			
	Fancy wood	do	20. 00	15. 02
	Plain	do	8. 00	6. 008
	Trunks:			
	Plain	do	2. 00	1. 502
	Fancy	do	6. 00	4. 506
	Prepared for match-wood	Pound	. 05	. 03776
	Walking sticks	Dozen	8. 00	6. 008
	Walking sticks, fancy	do	15. 00	11. 265
	Buckets	do	4. 00	3. 004
	Tables:			
	Fancy wood	Each	20. 00	15. 02
	Plain	do	8. 00	6. 008
	Billiard tables, with fittings	do	300. 00	225. 30
	Desks	do	3. 00	2. 253
	Desks, large, with drawers	do	25. 00	18. 775
	Desks, fancy, with presses	do	10. 00	7. 51
	Desks, fancy, without presses	do	6. 00	4. 506
	Cupboards or wardrobes	do	25. 00	18. 775
	Cupboards or wardrobes with glass	do	40. 00	30. 04
	Rulers	Dozen	2. 00	1. 502
	Chairs:			
	Painted	do	10. 00	7. 51
	Cane bottomed	do	20. 00	15. 02
	Fancy wood	do	25. 00	18. 775
63	Wool:			
	Sheep, gross weight	Pound	. 08	. 06008
	Alpaca, gross weight	do	. 16	. 12016
64	Zinc, in bars or sheets, gross weight	do	. 04	. 03004

WEST INDIES.

BARBADOES.

[Prepared by Consul L. G. Reed.]

Duties of customs inwards.

Classification.	Unit.	Duty.
Arrowroot, and all other starches	100 pounds....	\$0 24
Asses.....	Each	1 20
Bran, pollard, oats.....	100 pounds....	15
Bread, pilot and navy, and crackers	do	12
Bricks	Per 1,000.....	72
Butter	100 pounds....	1 80
Candles	do	2 00
Cement	Barrel	30
Cheese.....	100 pounds....	1 80
Coal, and mixed preparations thereof, and coke.....	Ton	60
Cocoa.....	100 pounds....	50
Coffee.....	do	60
Cordage (except twines)	do	36
Corn and grain unground	do	12
Fire-arms	Each	2 40
Fish:		
Dried, salted, or smoked	112 pounds....	05
Pickled	Barrel	10
Flour, wheat or rye.....	do	1 00
Indian meal, or other kinds.....	do	30
Gunpowder:		
Blasting	100 pounds....	1 20
Other kinds.....	do	2 40
Horses:		
Under 13½ hands high.....	Each	2 40
All others	do	9 60
Lard	100 pounds....	1 00
Liquors:		
Malt liquor, cider and perry, in wood.....	64 gallons....	3 60
Malt liquors, cider and perry, in bottles (reputed quarts).....	Dozen bottles..	24
Spirits and cordial (except rum and gin, and perfumed spirits to be used as perfumery only).....	Gallon	1 44
Gin:		
Below or equal to proof by Sykes's hydrometer.....	do	96
For every higher degree of proof in proportion.		
Rum:		
Below or equal to proof by Sykes's hydrometer.....	do	96
For every higher degree of proof in proportion.		
Wine:		
Sparkling.....	do	48
All other kinds.....	do	18
Matches:		
Lucifer and other kinds, each box to contain 100 sticks	Gross boxes ..	24
Boxes containing any greater or less quantity to be charged in proportion.		
Meat, salted or cured	100 pounds....	1 20
Metals, new:		
Composition nails, bolts, bars, rods, spikes, and rivets.....	do	1 00
Copper in sheets, rods, bars, bolts, spikes, nails, and rivets.....	do	1 00
Iron hoops, bars, and rods	do	08
Iron nails, spikes, rivets, and clinches	do	24
Lead, sheet, and pipe	do	24
Yellow metal, in sheets	do	1 00
Metal, old:		
Copper, brass, and pewter	100 pounds....	48
Mules:		
Value of \$60, and upwards	100 weight....	7 20
Under the value of \$60	Cost	4 80
Oil, kerosene.....	Gallon	05
Oil meal and oil cake.....	100 pounds....	10

Duties of customs inwards—Continued.

Classification.	Unit.	Duty.
Rice	100 pounds....	12
Soap	do	30
Sugar, refined	do	2 40
Tallow	do	48
Tea	Per pound	06
Tobacco:		
Cigars, cheroots and cigarettes of all kinds	do	1 20
Snuff	do	36
Other manufactured	do	36
Other manufactured, if in outer packages of not less than 80 pounds net weight each	do	48
Leaf	do	24
If in outer packages of less than 50 pounds net weight each	do	36
Wood:		
Hemlock, birch, beech, white pine, pitch pine, and spruce, superficial measurement of 1 inch thickness	1,000 feet	1 20
Hoops:		
Whether coiled or straight	1,200 pieces....	1 44
All other kinds, except in naves, felloes, spokes, and unsquared posts	100 cubic feet ..	2 00
Shingles of all descriptions	Per 1,000	36
Staves, white and red oak, whether loose or made up in bundles or shooks	1,200 pieces....	1 44
Oxbows	Dozen	12
Truss hoops	Set of nine....	30
All other articles not in this table particularly enumerated or in following table particularly exempted, 8 per cent. ad valorem.		

Exemptions from duty.

All articles for the use of the governor of the island.

All articles and things whatsoever imported by the local government for the police or for public institutions.

All articles specially imported for the use or decoration of any place of worship and not imported, for sale.

All articles and things of every description imported by any naval officer on full pay in Her Majesty's service, for his use and accommodation, on the certificate to that effect of the officer so importing.

The governor, purchasing any articles whatsoever, shall be entitled to the duty refunded to him out of the public treasury, on the warrant of the governor in council, on the certificate that he is entitled to the refund.

Where horses are purchased by the governor, direct from the importer, within six months from the date of import, the duty shall be allowed him, on the warrant of the governor in council, on the certificate that he is entitled to the refund.

Asphalt.

Blubber and heads and offals of fish.

Bones and horns.

Books, forms, and papers (whether printed or manuscript), maps, charts, school globes, engravings, music, pictures, statues, and other works of art.

Bottles of glass or stone-ware, empty.

Bullion, coin, or diamonds.

Calves (sucking) and foals.

Cassaripe.

Cattle.

Cocoanuts.

Cotton wool.

Eggs.

Fresh fish and turtle.

Fresh fruit and vegetables.

Fresh meats.

Fuel, wood and charcoal.

Gravel, sand, soil, earth, and peat.

Green ginger.

Hay and straw.

Hoe sticks.

Horses brought into the island by equestrian companies, provided the same are taken away by them on leaving, and race horses on every occasion after the first importation thereof, provided no drawback had been claimed thereon on exportation.

Hulls, boats, masts, spars, apparel, tackle, and furniture of vessels condemned by survey, and on which tonnage duty shall have been paid.

Ice.

Leeches.

Lemon and lime juice.

Lime, building and temper, and limestone.

Live and dead stock not enumerated in Table A.

Logwood.

Manure.

Metals, old iron and old lead.

Molasses.

Oars and sweeps.

Packages in which goods are imported, except new trunks, vats, hogsheads, and puncheons.

Passengers' baggage, containing apparel and articles of personal use and professional apparatus.

Patterns and samples, of no intrinsic value.
Personal effects of individuals belonging to this island dying abroad.
Pozzolana.
Rags.
Raw hides and skins.
Salt.
Sawdust.
Soda water and mineral water.
Specimens illustrative of natural history, seeds, bulbs and roots, and cuttings of plants or shrubs of all kinds.
Spars.
Sugar, raw or Muscovado.
Sugar, crystallized vacuum pan.
Tablets, tombstones and all the appurtenances thereto, imported specially for immediate erection and not for sale, on the certificate of the person for whom imported.
Tar, pitch, and resin.
Turtle and tortoise shell, unmanufactured.

GUADELOUPE.

The full tariff of Guadeloupe was printed in Consular Reports No. 3, p. 37.

HAYTI.

Haytian tariff of duties on leading products and manufactures of the United States

[Prepared by Consul-General Thompson.]

No.	Classification.	Unit.	Duty.
1	Agricultural implements.....		Free.
2	Animals; Cattle, hogs, horses, mules, sheep, and all others.....		Do.
3	Art works, 20 per cent. ad valorem.		
4	Bark and extracts for tanning	Barrel.....	\$0 25
5	Blacking, shoe: In sticks or pots	Dozen	50
	Liquid in bottles	do	10
	Balls	do	10
	Small earthen jars.....	do	20
6	Bones, hoops, horns, &c.		
7	Books: Bound per volume: Folio.....		20
	Quarto.....		15
	Octavo.....		08
	Twelvemo		05
	Sixteenmo		03
	Eighteenmo		03
	Unbound half price, according to folio.		
	Classical, grammars, dictionaries of dead or living languages, Greek and Latin authors, arithmetics, geometries, alge- bras, and elementary geographies, bound or unbound.		Free.
	Memorandum for pocket	Dozen	30
	Memorandum for pocket, fine	do	40
	Maps, mounted: Over 48 inches.....	Each	25
	Under 48 inches.....	do	12
	Engravings, small and ordinary without frames, other than such as are prohibited by law.	Dozen	12
	Engravings of saints and others, colored or uncolored: 3 to 4 by 3 to 6 inches.....	Each	14
	6 to 8 by 6 to 12 inches.....	do	25
	9 to 11 by 13 to 15 inches	do	50
	12 to 20 by 16 to 24 inches	do	75
	21 to 30 by 25 to 40 inches	do	1 20
	31 to 36 by 35 to 40 inches.....	do	2 50
	Larger sizes, 20 per cent. ad valorem.		
8	Brass: And manufactures thereof, excepting such articles otherwise provided for.	Cwt	1 00
	Bells	do	5 00
	Bells, bronze	do	4 00
	Bells, small, hand.....	Dozen	50
	Watch keys.....	do	12
	Watch keys, fine.....	do	1 00
9	Breadstuffs: Bread and biscuits: White.....	Cwt	75
	Common	do	37
	Small	do	75
	Barley		
	Flour, corn, wheat, barley.....	Barrel	1 00
	Indian corn	do	1 00
	Oats.....	do	30
	Oats.....	Demijohn.....	12
	Rye.....	Barrel	50
	Wheat	do	50
10	Bricks		
11	Brooms and brushes: Hair or straw	Dozen	1 00
	Hair or straw, hand.....	do	50
	Feather	do	1 00
	Clothes brushes: Fine	do	60
	Common, and shoe.....	do	25
	Tooth brushes.....	do	50
	Hair brushes	do	50

Haytian tariff of duties on leading products and manufactures, &c.—Continued.

No.	Classification.	Unit.	Duty.
12	Candles:		
	Wax or spermaceti.....	Pound.....	\$0 05
	Tallow.....	do.....	02
13	Carriages.....		10 00
	Cabs, gigs, &c.....		5 00
14	Cars, railroad, steam.....		
15	Chemicals, 20 per cent. ad valorem.		
16	Clocks:		
	Musical, large.....	Each.....	8 00
	Brass or bronze.....	do.....	6 00
	Ordinary and common.....	do.....	2 00
	Sand (hour glasses).....	Dozen.....	75
	Wooden, with chain and weights.....	Each.....	60
	House, church, &c., 20 per cent. ad valorem.		
	Watches:		
	Gold.....	Each.....	1 50
	Silver.....	do.....	75
	Brass.....	do.....	50
17	Coal.....	Hogshead.....	1 00
	Coal.....	Barrel.....	20
18	Copper:		
	Ingot, bars, sheet.....	Cwt.....	1 00
	Nails, rivets.....	do.....	4 00
19	Cotton, prohibited:		
	Manufactures, bleached or unbleached cloth, under 24 inches.....	Ell.....	01
	24 to 30 inches.....	do.....	01½
	30 to 36 inches.....	do.....	02
	36 to 42 inches.....	do.....	02½
	42 to 50 inches.....	do.....	03
	50 to 60 inches.....	do.....	03½
	Fine, under 30 inches.....	do.....	04
	Prints:		
	Up to 30 inches.....	do.....	04
	Under 26 inches.....	do.....	03
	Above 30 inches (approximative).		
	Drills and duck:		
	Mixed linen and cotton:		
	Up to 30 inches.....	do.....	07
	Ordinary.....	do.....	06
	Pure cotton.....	do.....	04
	Ordinary.....	do.....	03
	Denims blue:		
	22 inches and under.....	do.....	02
	22 to 30 inches.....	do.....	02½
	30 to 36 inches.....	do.....	03
	Pantaloon stuffs, 4-4.....		04
	Sheeting.....	do.....	10
	Ribbons or tape.....	12 ells.....	02
	Stockings.....	12 pairs.....	40
	Shawls.....	Dozen.....	1 00
	Thread.....	Dozen spools.....	02
	Thread, colored.....	do.....	06
	Towels:		
	Colored border.....	Dozen.....	40
	Common.....	do.....	20
	Tablecloth.....	Ell.....	08
20	Earthenware.....	Dozen pieces.....	12
	Stoneware, per crate:		
	1 to 3 feet large.....	Each.....	2 00
	3 to 5 feet large.....	do.....	4 00
	Over 5 feet large (approximative).		
	Stoneware, per hogshead.....	do.....	5 00
	Chinaware:		
	White and ordinary same as above:		
	Fine.....	Piece.....	03
21	Fertilizers.		
22	Fish:		
	Codfish.....	Cwt.....	40
	Mackerel.....	Barrel.....	50
	Herrings:		
	Alewives.....	do.....	50
	Scalded.....	Box.....	06
23	Flax, hemp, jute:		
	Ropes.....	Cwt.....	1 50
	Twine.....	Pound.....	03
24	Fruits:		
	Dried.....	do.....	02
	In brandy.....	Dozen bottles.....	50
	In vinegar, in jars.....	Each.....	50
25	Fur, hoods:		
	For ladies.....	Dozen.....	8 00
	For children.....	do.....	3 00

Haytian tariff of duties on leading products and manufactures, &c.—Continued.

No.	Classification.	Unit.	Duty.
26	Glass, manufactures:		
	Tumblers, fine:		
	With covers	Each	\$0 25
	Large	Dozen	50
	Medium	do	25
	Small	do	12
	Common	do	25
	Goblets, fine	do	75
	Chimneys	do	25
	Watch-glasses	Gross	2 50
	Spectacle glasses	do	1 50
	Shades for chandeliers:		
	Fine	Pair	1 50
	Common	do	50
	Shades for candlesticks	do	50
	Vases for flowers:		
	Ornamented	do	1 50
	Plain	do	50
	Window pictures, &c., 20 per cent. ad valorem.		
27	Glucose		
28	Glue:		
	Animal	Pound	04
	Fish	do	05
29	Gunpowder	Pound	05
30	Hair	do	01
31	Hay	Bale	30
32	Hides and skins:		
	Cow	Each	64
	Buffalo	Dozen	12 00
	Horse	Each	30
	Ox, tanned	Dozen	2 00
	Sheep-skins	do	50
	Morocco	do	1 00
	Morocco, imitation	do	50
	Hog	do	3 00
	Calf	do	2 00
	Calf, varnished	do	3 00
	Chamois	Each	30
	Chamois, imitation	Dozen	50
33	Honey	Bottle	04
34	Hops		
35	Ice		
36	India-rubber manufactures		
37	Iron and steel manufactures:		
	Bar	Cwt	60
	Sheet	do	50
	Galvanized	do	75
	Sad-irons	Dozen pairs	1 00
	Tailors' irons	do	1 25
	Horseshoes	Set of four	08
	Hoes	Dozen	1 00
	Plane-irons	do	20
	Shovels	do	75
	Pocket-knives:		
	Several blades	do	50
	One blade	do	16
	Common	do	08
	Shoemakers' knives	do	15
	Hunting knives	do	2 00
	Bowie (prohibited).		
	Table knives:		
	Ordinary, without forks	do	50
	Ordinary, with forks	do	1 00
	Fine, without forks	do	75
	Fine, with forks	do	1 25
	Common, with forks	do	40
	Common, without forks	do	20
	Indigo knives	do	50
	Coopers' knives	do	75
	Tanners' knives	do	1 00
	Cutlass	do	1 00
	Cutlass, agriculture	do	30
	Pots	Cwt	75
	Hammers, assorted	Dozen	40
	Brace and bits	do	1 00
	Bits without brace	do	50
	Gimlets	do	25
	Bits for horses	do	25
	Bits for horses:		
	Plated	do	3 00
	Ordinary	do	2 50
	Common	do	2 00

Haytian tariff of duties on leading products and manufactures, &c.—Continued.

No.	Classification.	Unit.	Duty.
37	Iron and steel manufactures—Continued.		
	Mortars and pestles.....	Pound.....	\$0 04
	Molds for bullets.....	Dozen.....	75
	Mills:		
	Coffee.....	Each.....	06
	Tobacco.....	do.....	1 00
	Pincers, jewelers' and shoemakers'.....	Dozen.....	40
	Crowbars.....	do.....	40
	Platines, for baking cassaves.....	Each.....	20
	Stoves.....	Cwt.....	75
	Furnaces.....	do.....	25
	Hinges.....	Dozen pairs.....	1 00
	Frying-pans.....	do.....	1 50
	Rivets.....	Cwt.....	1 50
	Castors for table.....	Dozen.....	25
	Rat-traps.....	do.....	50
	Garden rakes.....	do.....	50
	Adzes.....	do.....	50
	Axes.....	do.....	1 00
	Hatchets.....	do.....	75
	Curry-combs.....	do.....	1 00
	Springs:		
	For carriages, 20 per cent. ad valorem.		
	For watches, 20 per cent. ad valorem.		
	Hinges for trunks and chests:		
	2 to 4 inches.....	Dozen pairs.....	40
	7 to 12 inches.....	do.....	75
	13 upwards.....	do.....	1 00
	Swords:		
	Cavalry.....	Free.....	
	Officers':		
	Fine.....	Each.....	1 50
	Plain.....	do.....	1 00
	Ordinary brass sheath.....	do.....	50
	Ordinary leather sheath.....	do.....	40
	Grass-scythes.....	Dozen.....	40
	Locks:		
	Door, assorted sizes.....	do.....	1 00
	Trunk, assorted sizes.....	do.....	25
	Bolts:		
	For doors, assorted sizes.....	do.....	25
	Large.....	do.....	50
	Saws:		
	Large and medium, unmounted.....	do.....	2 00
	Small, unmounted.....	do.....	1 50
	Augers, assorted.....	do.....	25
	Corkscrews.....	do.....	40
	Trowels.....	do.....	50
	Pipe for water.....	Cwt.....	1 00
	Needles:		
	Sewing.....	1,000.....	10
	Sail.....	do.....	25
	Awls:		
	Without handles.....	Dozen.....	25
	With handles.....	do.....	12
	Rings for awnings, tents.....	Gross.....	25
	Railings.....	Cwt.....	1 00
	Railings, gates, and balcony.....	do.....	2 00
	Chain:		
	For cables.....	do.....	1 00
	Other.....	Pound.....	02
	Chisels, masons', joiners'.....	Dozen.....	20
	Scissors:		
	Tailors', over 6 inches.....	do.....	20
	Ladies', fine.....	do.....	50
	Ladies', common.....	do.....	20
	Bed-keys.....	Dozen.....	50
	Bed-screws.....	Gross.....	75
	Nails.....	Cwt.....	75
	Screws:		
	Under 2 inches.....	Gross.....	06
	Over 2 inches.....	Dozen.....	40
	Squares.....	Each.....	06
	Axles.....		Free.
	Wire.....	Pound.....	08
	Bedsteads.....	Each.....	3 00
38	Jewelry:		
	False, 20 per cent. ad valorem.		
	Genuine, 10 per cent. ad valorem.		
39	Lamps:		
	Large.....		2 00
	Small hand.....	Dozen.....	3 00

Haytian tariff of duties on leading products and manufactures, &c.—Continued.

No.	Classification.	Unit.	Duty.
40	Lead:		
	Sheet	Pound	\$0 02
	Pig	do	01
	Shot	do	04
41	Leather:		
	Tanned	Dozen sides	3 00
	Shoes:		
	Varnished, for men	Dozen	2 50
	Ordinary, for men	do	2 00
	Common, for troops	do	1 00
	Boys'	do	2 00
	Ladies', fine	do	2 00
	Ladies', morocco	do	1 50
	Children's	Per dozen	1 00
	Misses'	do	1 50
	Boot, upper	Per pair	40
	Aprons	Each	75
	Belts:		
	Sword	Per dozen	2 50
	Sword, varnished	do	1 50
	Visors, for caps	do	20
42	Lime and cement:		
	Cement	Hogsheads	1 00
	Cement	Barrels	25
43	Malt liquors:		
	Beer and porter	Barrel of 60 gallons.	2 00
	Beer and porter, bottled	Per dozen	25
44	Medical instruments, 20 per cent. ad valorem.		
45	Naval stores:		
	Rosin	Barrel	50
	Tar	do	75
	Pitch	do	50
	Turpentine	Gallon	12
46	Oil cake and meal		
47	Oils:		
	Animal		
	Mineral		25
	Vegetable:		
	Olive:		
	Cask	Gallon	20
	Cans, 3 or 4 gallons	Can	75
	Cans, one-half gallon	do	37
	Baskets	12 bottles	50
	Baskets	12 bottles, quart	75
	Boxes	30 vials	60
	Boxes	12 vials	20
	Burning		5
	Linseed and turpentine	Gallon	12
	Almond	Bottle	12
	Almond	Pound	10
	Castor, clarified	Bottle	16
	Castor, clarified	Gallon	64
48	Paraffine and wax	Pound	5
49	Paints of all kinds	do	1½
50	Paper:		
	Sand	Quire	8
	Drawing, map, &c	100 sheets	1 00
	Ministerial:		
	Gilt-edge	Ream	1 00
	Plain-edge	do	75
	Fine, over 15 inches	do	60
	Ordinary, under 15 inches	do	70
	Scholar, common	do	15
	Letter	do	48
	Letter, gilt-edge	do	60
	Wrapper, cartridge, &c	Quire	12
	Ruled for music	do	12
	Wall:		
	Satin, velvet, and gilt	Roll	25
	Satin-velvet	do	18
	Satin, ordinary	do	6
	Plain	do	3
	Water-proof	Ream	40
	Boxes	Dozen	50
	Boxes, office	do	1 00
	Boxes, hat	do	75
	Boxes, models	do	50
	Past-board	Sheet	16

Haytian tariff of duties on leading products and manufactures, &c.—Continued.

No.	Classification.	Unit.	Duty.
51	Plated ware :		
	Candlesticks :		
	Large	Pair	\$1 00
	Above 10 inches	do	50
	Under 10 inches	do	25
	Spoons and forks	Dozen pairs ..	2 00
	Spoons and forks, galvanized	Dozen	50
	Sheaths for swords	Each	75
52	Provisions :		
	Salt pork	Cask	2 50
	Salt pork	Barrel	1 50
	Salt mutton	do	2 00
	Salt hams	Pound	02
	Salt beef	Barrel	1 50
	Smoked beef	Cwt	1 50
	Canned beef	Can	50
	Oleomargarine		
	Lard	Cwt	1 00
	Butter	do	1 00
	Cheese, all kinds	Pound	2
53	Quicksilver, 20 per cent. ad valorem.		
54	Seeds :		
	Garden		Free.
	Linseed	Cwt	1 00
	Juniper	Pound	03
	Bird	Cwt	1 00
55	Soap	do	1 00
	Soap, toilet	Dozen	16
56	Spirits :		
	Brandy, per cask of 60 gallons	Per gallon	50
	Brandy	Box of 12 bot- tles.	1 00
	Brandy	Box, quarts, 12 bottles.	1 50
	Spirit of wine	Gallon	50
	Gin, cask of 60 gallons	do	25
	Gin	Box of 12 flasks	75
	Gin	Box of 12 flasks, pints.	50
57	Starch		
58	Sugar :		
	Refined	Pound	03
	Molasses		
59	Tin :		
	Double	100 sheets	2 00
	Single	do	1 00
60	Tobacco :		
	Roll	Pound	10
	Leaf	do	04
	Chewing	do	04
	Snuff	do	20
	Cigars	100	25
61	Vegetables, preserved	Can	10
62	Wood.		
	Lumber :		
	Pitch pine	1,000 feet	2 50
	White pine	do	1 75
	Oak	do	3 50
	Pumps for ships, &c	Each	2 00
	Pulleys :		
	Double	Inch	02
	Single	do	01
	Bedsteads :		
	Mahogany	Each	6 00
	Mahogany, carved	do	8 00
	Oak		4 00
	White pine		3 00
	Carriage-wheels	Pair	2 00
63	Wool	Pound	04
64	Zinc	do	02

The full tariff of Hayti was printed in Consular Report No. 18, p. 604. The changes were noted in No. 32, p. 298.

PORTO RICO.

Tariff duties of Porto Rico.

[Prepared by Edward Conroy.]

Number.	Articles.	Unit.	Duty on American productions.	
			Under Spanish and American flag.	Under other foreign flag.
1	Agricultural implements		Free....	Free.
2	Animals:			
	Cattle	Head	\$4 00	\$5 80
	Hogs	do	1 80	2 61
	Horses and mules	do	5 00	7 25
	Sheep and all others	do	60	87
	When introduced to improve breed and under special permission are free of duty.			
3	Art works:			
	Oil paintings	Each	32	46
	Sculptures, marble	100 kilograms	1 92	2 76
	Drawings and pictures	Kilogram	1 20	1 74
4	Bark and extracts:			
	Bark for tanning		Free....	
	Other kind of barks	100 kilograms	4 50	6 75
	Extracts	do	10 80	17 40
5	Blackening:			
	Asphalt	do	53	76
	Shoe	do	1 26	2 03
6	Bones, hoofs, horns, &c	do	4 00	5 80
7	Books, maps, engravings, &c	do	5 40	6 90
8	Brass, and manufactures of:			
	Bars	do	6 40	9 90
	Sheet, nail, wire tubes	do	10 00	14 50
	All other manufactures	do	16 40	23 78
9	Breadstuffs:			
	Barley	do	80	1 16
	Bread and biscuits	do	2 60	3 77
	Indian corn:			
	Raw	do	80	1 16
	Manufactured	do	65	1 10
	Oats	do	80	1 16
	Rye	do	80	1 16
	Wheat	do	80	1 16
	Flour	do	2 45	3 25
10	Bricks			
11	Brooms and brushes	do	4 00	5 80
12	Candles:			
	Tallow	do	4 00	5 80
	All other kinds	do	5 40	8 70
13	Carriage and horse cars:			
	Carriages	One	60 00	87 00
	Horse cars	do	1 60	2 38
14	Cars (railroad, steam):			
	Cars	do	240 00	384 00
	Other vehicles belonging to railroads	do	120 00	174 00
15	Chemicals:			
	Acids, all kind	100 kilograms	1 26	2 03
	Alum	do	90	1 45
	Oxide of potash and soda	do	4 68	7 54
	Chloride of lime, &c	do	59	87
	Nitrate of potash and soda	do	3 24	5 22
	Oxide of (soda), lead	do	2 16	4 38
	Sulphate of iron	do	1 08	1 74
	All other chemical preparations	Kilogram	09	15
16	Clocks and watches:			
	Clocks	One	32	46
	Watches:			
	Gold	do	1 20	1 80
	Silver and of other metals	do	96	1 38

Tariff duties of Porto Rico—Continued.

Number.	Articles.	Unit.	Duty on American productions.	
			Under Spanish and American flag.	Under other foreign flag.
17	Coal:			
	Animal	100 kilos	\$2 88	\$4 14
	Mineral and vegetable		Free	Free.
18	Copper:			
	Ore, ingots, and bar.	100 kilos	6 40	9 20
	Sheet	do	10 00	14 50
19	Cotton:			
	Raw	do	5 00	7 25
	Thick textures, plain, unbleached, bleached, or dyed:			
	Common:			
	Until 10 threads	Kilo	10	14
	11 to 16 threads	do	14	20
	17 to 21 threads	do	19	27
	22 upwards	do	30	43
	Middling:			
	Until 13 threads	do	16	23
	14 to 17 threads	do	20	29
	18 to 21 threads	do	34	49
	22 upwards	do	52	75
	Superior:			
	Until 12 threads	do	24	34
	13 to 17 threads	do	30	43
	18 to 23 threads	do	40	58
	24 upwards	do	66	95
	Twilled texture:			
	Common	do	14	20
	Superior	do	25	56
	Blankets	do	12	17
	Velvet	do	52	75
	Crochet cotton and lace tulle, &c.	do	1 00	1 45
	Other articles woven of cotton	do	44	63
20	Earthenware, stone, and china:			
	Slates, slabs, bricks, tiles, tubes, &c.:			
	Common	100 kilos	80	1 12
	Fine	do	3 60	5 00
	Porcelain	do	6 48	9 00
21	Fertilizers		Free	Free.
22	Fish:			
	Living		Free	Free.
	Fresh, salted, pickled, smoked, and otherwise preserved.	100 kilos	88	1 88
	Tinned	Kilo	10	15
23	Flax, hemp, and jute:			
	Raw	100 kilos	1 60	2 32
	Lint, hemp, and jute	do	3 00	4 35
	Lint, flax	do	16 00	23 20
	Thread	do	20 00	29 00
	Rope	do	4 00	5 80
	Common unbleached texture, as bags, &c.	Kilo	04	06
	Creas and similar textures: *			
	Until 10 threads	do	14	20
	11 to 15 threads	do	22	32
	16 to 20 threads	do	45	65
	21 upwards	do	85	1 23
	Hammocking	do	21	30
	Drills, towels, &c.	do	34	49
	Lace	do	3 20	4 60
	Other articles, woven, of flax, hemp, and jute	do	80	1 15
	Mats, floor and other	do	05	07
24	Fruits:			
	Fresh and dried	100 kilos	2 16	3 13
	Raisins and almonds	do	3 00	4 35
	Preserved:			
	In tins	Kilo	10	15
	In sirup	do	04	06
25	Furs	do	80	1 15
26	Glass:			
	Common, bottles, &c.	100 kilos	3 20	4 60
	Fine, bottles, &c.	do	5 60	8 05
	Slabs	do	2 72	3 91
	Mirrors and eye-glasses	do	12 80	18 40
27	Glucose	do	2 50	3 60
28	Glue	do	18 00	29 00
29	Gunpowder	Kilo	05	09

* With 20 per cent. additional.

Tariff duties of Porto Rico—Continued.

Number.	Articles.	Unit.	Duty on American productions.	
			Under Spanish and American flag.	Under other foreign flag.
30	Hair	100 kilos	\$13 12	\$18 86
31	Hay	do	3 48	5 04
32	Hides and skins:			
	Hides	do	10 00	14 50
	Skins	Kilo	25	36
33	Honey	100 kilos	9 00	9 00
34	Hops	do	4 50	6 75
35	Ice		Free	Free.
36	India-rubber and manufactures:			
	Raw sheets, tube, hose, shoes, life-preservers, and other analogical articles.	Kilo	20	29
	All other manufactures	do	60	89
37	Iron and steel:			
	Iron:			
	Cast, bar, and old	100 kilos	60	87
	Tubes and ordinary manufactures	do	96	1 38
	Fine manufactured	do	4 00	5 80
	Iron and steel, forged in bars, springs, axles, &c.	do	1 60	2 32
	Wire, nails, screws	do	2 60	3 77
	Iron, manufactured with baths of zinc, painted or varnished:			
	Common	do	2 56	3 68
	Fine	do	5 00	7 25
	Needles, pens, and other analogical manufactures	Kilo	80	1 10
	Knives, razors, scissors	do	29	40
	Arms (swords, &c.)	do	60	87
	Arms, fire	do	1 20	1 74
38	Jewelry:			
	Gold	Hectogram	6 00	9 00
	Silver	do	90	1 35
39	Lamps:			
	Copper	100 kilos	16 40	23 78
	Copper gilt	do	40 00	58 00
	Zinc	do	6 00	8 70
	Common metal	do	8 00	11 50
	Tin	do	9 60	13 92
	Porcelain	do	6 48	9 00
	Earthenware	do	3 60	5 00
	Glass	do	5 60	8 05
40	Lead:			
	Raw	do	6 00	8 70
	Manufactured:			
	Common	do	8 00	11 50
	Fine	do	20 00	29 00
41	Leather:			
	Tanned	Kilo	25	36
	Manufactured in pieces	do	45	65
	Shoes and boots	do	55	80
	Articles of saddlery	do	40	58
	Gloves	do	4 00	5 80
	Other manufactures	do	80	1 15
42	Lime and cement:			
	Lime:			
	Raw		Free	
	Manufactured	Kilo	16	23
	Cement:			
	Manufactured	do	16	23
43	Malt liquors	Hectoliter	2 40	3 48
44	Medical instruments pay duties on the materials of which they are composed with 50 per cent. additional.			
45	Naval stores, resin, tar, and turpentine and pitch	100 kilos	53	76
46	Oil cake and meal	do	40	58
47	Oils:			
	Animal:			
	Raw	do	4 00	5 80
	Purified	do	3 60	5 80
	Mineral	do	2 00	2 88
	Vegetable	do	4 50	6 75
48	Paraffine and wax:			
	Paraffine	do	5 40	8 70
	Wax	do	10 80	17 40
49	Paints:			
	Raw	do	48	69

Tariff duties of Porto Rico—Continued.

Number.	Articles.	Unit.	Duty on American productions.	
			Under Spanish and American flag.	Under other foreign flag.
49	Paints—Continued.			
	In powder.....	100 kilos	\$2 88	\$4 14
	In oil.....	do	1 26	2 03
50	Paper:			
	Printing.....	do	3 00	4 35
	Writing.....	do	6 90	8 70
	Wall paper:			
	Gilt.....	do	24 00	34 80
	Other.....	do	6 00	8 70
	Straw paper.....	do	2 00	2 90
	Pasteboard:			
	Raw.....	do	2 72	3 91
	Manufactured.....	do	32	46
51	Plated ware.....	do	40 00	58 00
52	Provisions:			
	Meat:			
	Fresh.....	do	2 80	4 06
	Salt.....	do	2 26	3 25
	Oleomargarine, not imported.			
	Lard.....	do	3 52	5 06
	Butter.....	do	6 40	9 20
	Cheese.....	Kilo	06	09
53	Quicksilver.....	100 kilos	2 72	3 91
54	Seeds.....	do	40	58
55	Soap:			
	Common.....	do	2 99	3 77
	Fine.....	Kilo	36	58
56	Spirits.....	Hectoliter	9 25	13 85
57	Starch.....	100 kilos	2 50	3 60
58	Sugar, all kinds, and molasses.....	do	9 00	9 00
59	Tin:			
	Raw.....	do	2 56	3 68
	Manufactured.....	do	9 60	13 92
60	Tobacco:			
	Leaf.....	Kilo	35	35
	Cigars and cigarettes.....	do	70	70
61	Vegetables:			
	Fresh.....	100 kilos	61	87
	Preserved.....	do	1 28	1 84
62	Wood:			
	Hogsheads and hoops.....	do	27	35
	Barrels.....	do	1 38	1 88
	Boards, beams, scantling, and for naval purposes.....	Centimeter	1 30	1 76
	Shingles and clapboards.....	100 kilos	22	30
	For carving and like purposes.....	do	1 60	2 32
	Furniture:			
	Common.....	do	6 25	9 06
	Fine.....	do	18 75	27 18
	Extra fine.....	do	30 00	43 50
63	Wool.....	do	13 12	18 86
64	Zinc.....	do	2 56	3 68

NOTES.—(1) On all the above rates 6 per cent. additional duty. (2) Duties are payable in Spanish gold, but the treasury admits payments at present in Mexican silver at \$1.05263 for \$1 Spanish.

The full tariff of Porto Rico was printed in Consular Reports No. 50, p. 440.

TURK'S ISLAND.

The full tariff of Turk's Island was printed in Consular Reports No. 28, p. 178.

SOUTH AMERICA.

ARGENTINE REPUBLIC.

[Prepared by Consul E. L. Baker.]

I am in receipt of the circular of the Department of State of the date of April 19, 1886, instructing me to report the Customs duties that are collected under the laws of the Argentine Republic on certain specified articles of importation, the rate of duty to be given both in the native currency and in United States money.

In responding to the requirements of this circular, I would premise that the national currency of the Argentine Republic corresponds so nearly to the money of the United States that a column of equivalents seems to be unnecessary, the value of the Argentine gold dollar, or peso, being 96.5 cents estimated in United States gold dollars. In other words, the Argentine dollar is the exact equivalent of the well-known five-franc piece of France.

I would further premise that the Argentine customs tariff is not a continuing law, but runs only for the year for which it is enacted, each Congress modifying its provisions and its rates to suit itself or the emergencies of the nation at each annual session.

I may add that the Argentine customs tariff, except in reference to a few specified articles, is entirely ad valorem; and that, for the imports levied by the Government, the custom-house valuations of all imported articles are officially regulated and fixed by the executive department at the beginning of each year; and hence the mere rate of duty would convey to our importers a very imperfect idea of the Argentine tariff, unless the official valuation is also given. For this reason I deem it proper not only to report the terms and rates of the tariff of this country, but also the values on which the customs duties are made.

The following is a translation of the Argentine tariff for the year 1886:

CUSTOM-HOUSE LAW.

ARTICLE 1. All foreign merchandise imported for consumption shall pay a duty of 25 per cent. on its value in deposit, except the following articles, to wit:

(1) All tobaccos, which shall pay a duty of 55 per cent.

(2) Fire-arms, powder, and munitions, perfumery, cigars of all kinds, and snuff, which shall pay a duty of 50 per cent.

(3) Ready-made clothing and confections, hats and caps, shoes, saddles and harness, carriages, furniture, matches (except wax), fire-crackers, yerba mate, and objects of art, which shall pay a duty of 45 per cent.

(4) Iron, not galvanized, in plates, bars, ingots, hoops, white pine and spruce (un-worked), common salt, all kinds of writing and printing paper, which shall pay a duty of 10 per cent.

(5) Sackcloth, jewelry, gold and silver (worked), silk thread and fringe, every instrument or utensil with a handle or having gold or silver adornment (when these increase its value one-third), plows, staves, and casks of wood or iron, printed books, with paper binding or in cloth, or pasteboard without gold edges, printing-presses, printing materials, with the exception of types, lithographic presses, machinery of all kinds for agricultural or industrial establishments, steam-engines, or pieces of the same, thread wire for binding purposes, sulphuric acid, and sulphate of lime, which shall pay a duty of 5 per cent.

(6) Precious stones unset, which shall pay a duty of 2 per cent.

(7) The following specific duties are hereby imposed, to wit:

Wheat.....	per 100 kilograms..	\$1 65
Starch.....	per kilogram..	05
Coffee.....	do.....	08
Macaroni.....	do.....	07
Crackers and biscuits.....	do.....	09
Flour and corn-meal.....	do.....	04

Hominy	per kilogram..	\$0 04
Tea of every quality	do.....	30
Sugar	do.....	07
Common wines in casks	per liter..	06
Fine wines in casks	do.....	22
Wine, bottled, of every class	do.....	22
Beer or cider, per liter or bottle	do.....	15
Alcohol in casks, not exceeding 30 degrees	do.....	15
Liquors not exceeding 25 degrees	do.....	15
Alcohol in bottles, not less than 1 liter	per bottle..	25
Liquors in bottles, not less than 1 liter	do.....	25
Liquors of greater strength than 25 degrees	In proportion.	
Kerosene	per liter..	25
Candles, sperm and stearine	per kilograms..	15
Stearine	do.....	12
Playing cards	per gross..	10 00
Wax matches	per kilogram..	50

Articles of weight shall pay the duty with their packages included.

ART. II. The following articles shall be imported free of duty, to wit: Vessels, and machinery for steamers, stove coal, wire for fencing and for telegraphs, breeding animals and cattle on the hoof, fresh fish and fruit, furniture and tools of immigrants of little value, gold and silver, coined or in bullion; plants, railway and tramway materials, locomotives, wheels, with or without axles; iron pipes for gas or water, quicksilver, frames for casks, special powder for mines, church ornaments asked for by ecclesiastics, school books and furniture, asked for by the school board; quicksilver, seeds for agricultural purposes, sheep dips for the cure of scab, and such articles as are excepted by special laws or contracts made in pursuance of laws of Congress.

ART. III. All kinds of produce of the country are free of export duties except the following, which shall pay according to their value, to wit:

(1) Washed and unwashed wool, skins of wild animals, sheep-skins, washed or unwashed, and ostrich feathers shall pay an export duty of 4 per cent.

(2) Animal oils, horns and horn-piths, bone ash, hair, hide-cuttings, grease, tallow, bones, and hides not enumerated above, which shall pay an export duty of 3 per cent.

ART. IV. Import duties shall be liquidated in accordance with a tariff of values formed on the basis of the price of the articles in deposit; and export duties shall be based on the price of the articles prepared for shipment. The duties on such articles as are not included in this tariff shall be paid on the declared value by those dispatching them.

ART. V. Custom-houses may retain for a period of forty-eight hours after inspection of the vista for account of the public treasury all merchandise whose declared value is considered too low, paying immediately to those interested the declared value with 10 per cent. addition in bills on the treasurer at ninety days' sight.

ART. VI. The executive department shall designate and fix the values of all merchandise and products which may be included in the tariff provided for in Article IV.

ART. VII. On all wines, oils, alcohols, beer, and liquors in casks, 5 per cent. shall be allowed for leakage, if they proceed from ports north of the equator; and of 2 per cent. if they proceed from ports south of that line. On the same articles in bottles 2 per cent. shall be allowed for breakage, from whatever ports they may proceed. On other articles the tare, leakage, and breakage shall be fixed in the tariff of values.

ART. VIII. All export duties shall be paid at the first port of departure, and must be dispatched directly for their foreign destination, it not being permitted to ship them from one port to another of the Republic without having first satisfied the duties.

ART. IX. All import duties must be satisfied before the delivery of the merchandise; when its value exceeds \$200 the payment must be made by bills on stamped paper with the proper stamps, drawn at ninety days' sight, with interest, and guaranteed to the satisfaction of the collector of the port. In all other cases the payment must be made in cash.

ART. X. All export duties must be paid in cash before the clearance of the vessel.

ART. XI. The internal transit of merchandise which has not paid import duties in some custom-house of the Republic is prohibited, except as follows:

(1) That which passes from Brazilian ports for those of Concordia, Federacion, and Paso de los Libres.

(2) That which passes from Chili to the custom-houses of Salta and Jujuy.

(3) That which passes from the custom-houses of Buenos Ayres and Rosario for those of Mendoza, San Juan, Salta, and Jujuy, and from there to Bolivia and Chili.

ART. XII. The executive department shall establish *tornaguías* (landing certificates) if agreements to this end can be arranged with the adjacent countries above named.

ART. XIII. This law shall continue in force during the year 1886.

AN ADDITIONAL DUTY.

The duties established by the foregoing tariff are recharged with the addition of 1 per cent. fixed by the third article of the Law of the Estimates (*Ley del Presupuesto*), which is as follows:

ART. III. The merchandise and products which, according to the customs law of 1886, are subject to duty shall pay an import duty of 1 per cent. additional.

From the tariff of values issued by the Argentine Government in pursuance of Articles IV and VI of the above tariff law, I translate and transcribe the following, which shows the official values and the rates of duty on the articles enumerated in the circular of the Department of State:

Tariff of custom-house values.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
1	Agricultural implements:			
	Plows:			
	Iron	Each	\$4 00	5 per cent.
	Steel	do	10 50	Do.
	Spades, with or without handles	Kilo	15	25 per cent.
	Handles for spades, hoes, rakes, &c.	Dozen	\$1 50 to 6 00	Do.
	Axes and hatchets	Kilo	36	Do.
	Cutting knives and sickles	Dozen	1 24 to 5 00	Do.
	Machines:			
	For adjusting wire fences	Kilo	40	Do.
	For making butter	Each	2 20 to 3 20	Do.
	Fanning-machines	do	(*)	5 per cent.
	Corn mills	do	5 00	25 per cent.
	Thrashing-machines	do	(*)	5 per cent.
	Steam engines	do	(*)	Do.
	Shovels and scoops	Kilo	17 to 25	25 per cent.
	Millstones	Each	40 00	Do.
	Mowers	do	40 00	5 per cent.
	Reapers	do	200 00	Do.
2	Animals of all kinds			Free.
3	Art works		(*)	45 per cent.
4	Barks and extracts		(*)	25 per cent.
5	Blacking	Kilo	27	Do.
6	Bones, hoofs, and horns		(*)	Do.
7	Books, maps, engravings, &c:			
	Books:			
	With paper covers	do	45	Do.
	With pasteboard covers	do	68	Do.
	With cloth covers	do	1 00	Do.
	Engravings and maps		(*)	Do.
8	Brass and manufactures of brass:			
	Ingots, bars and sheets	Kilo	50	Do.
	Wire	do	43	Do.
	Mortars	do	80	Do.
	Rings	do	80	Do.
	Scales (mounted)	Each	9 00 to 11 50	Do.
	Buckets	Kilo	80	Do.
	Trays	do	80	Do.
	Knockers	do	1 20	Do.
	Hinges	do	80	Do.
	Chains	do	80	Do.
	Bells:			
	Large	do	1 10	Do.
	Small	do	60	Do.
	Padlocks	do	1 60	Do.
	Faucets	do	1 00	Do.
	Tubes and piping	do	72	Do.
	Locks	do	2 00	Do.
	Nails	do	50	Do.
	Chandeliers	do	80	Do.
	Spurs	do	1 50	Do.
	Stirrups	do	1 20	Do.
	Bridle-bits	Dozen	5 00 to 16 00	Do.
	Knobs	Kilo	60	Do.
	Handles	do	1 20 to 1 60	Do.
	Coffee-pots	do	40	Do.
	Bolts	do	2 00	Do.
	Curry-combs	Dozen	00	Do.
	Smoothing-flats	Kilo	80	Do.
	Plumbs	do	62	Do.
	Tacks	do	50	Do.
	Rivets	do	80	Do.
	Screws	do	1 50	Do.
	Buttons	do	80	Do.
	Tholes	do	80	Do.

* Declared value.

Argentine tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
9	Breadstuffs:			
	Barley	Kilo	\$0 03	25 per cent.
	Biscuits and crackers	do	30	9 cts. per kilo.
	Indian corn:			
	In the ear	do	01	4 cts. per kilo.
	Shelled	do	02	Do.
	Corn meal	do	08	Do.
	Oats	do	06	25 per cent.
	Rye	do	06	Do.
	Wheat	do	08	\$1.65 per 100 kilometers.
	Flour	do	08	4 cts. per kilo.
10	Bricks			Free.
11	Brooms	Dozen	1 50	25 per cent.
	Brushes	do	\$1 80 to 4 00	Do.
12	Candles:			
	Sperm	Kilo	90	Do.
	Stearine	do	30	15 cts. per kilo.
13	Carriages and tram cars:			
	Landeaus	Each	1,000 00	45 per cent.
	Coupés	do	800 00	Do.
	Victorias	do	600 00	Do.
	Breck	do	300 00	Do.
	Tilbury	do	200 00	Do.
	Tram or horse car	do	(*)	Do.
14	Railroad materials and railway cars	do		Free.
15	Chemicals		(*)	25 per cent.
16	Clocks and watches:			
	Gold watches	Each	(*)	5 per cent.
	Silver watches	do	4 00 to 9 00	Do.
	Clocks, wood or zinc	do	2 00 to 6 00	25 per cent.
17	Coal			Free.
18	Copper, bars, ingots or sheets	Kilo	50	25 per cent.
19	Cotton manufactures		1 20	Do.
	Baize	do	50	Do.
	Bagging	do	1 00	Do.
	Duck	do	1 00	Do.
	Cassimeres, mixed	do	2 00	Do.
	Counterpanes	do	1 20 to 2 30	Do.
	Curtains, lace	do	4 00	Do.
	Ticking	do	1 30	Do.
	Crinoline	do	1 00	Do.
	Damask, mixed	do	3 00 to 12 00	Do.
	Fringe	do	1 00	Do.
	Flannel, mixed	do	1 25	Do.
	Bed-comforts	do	60	Do.
	Domestics and shirtings	do	85	Do.
	Grenadines, muslins, &c.	Sq. meter	13	Do.
	Prints, gingham, &c.	Kilo	80	Do.
	Checks, lists, &c.	do	1 25	Do.
	Sacking	do	42½	Do.
	Ponchos and shawls	do	1 20 to 1 60	Do.
	Stockings	do	1 50	Do.
	Socks	do	1 70	Do.
	Merinos, mixed	do	2 00	Do.
	Handkerchiefs	do	1 25	Do.
	Handkerchiefs, bordered	do	1 60	Do.
	Piqué	do	1 50	Do.
	Canvas	do	1 30	Do.
	Napkins	do	1 00	Do.
	Netting	do	1 40	Do.
	Towels and toweling	do	85 to 1 80	Do.
	Tulle	Sq. meter	08	Do.
	Veils	Dozen	1 40	Do.
	Thread	Kilo	1 30	Do.
20	Earthen, stone, and china ware:			
	Sugar bowls	Dozen	2 00 to 4 00	Do.
	Coffee-pots	do	2 00 to 4 00	Do.
	Candlesticks	do	1 80 to 2 00	Do.
	Preserve dishes	do	2 50 to 6 00	Do.
	Salad dishes	do	2 50 to 6 00	Do.
	Spittoons	do	2 50 to 7 50	Do.
	Dishes for meats	do	2 00 to 10 00	Do.
	Do	do	2 50 to 9 00	Do.
	Egg-stands	do	5 00 to 9 50	Do.
	Egg-cups	do	60 to 80	Do.
	Soap-dishes	do	60 to 3 00	Do.
	Jars	do	60 to 8 00	Do.
	Pitchers, washing	do	3 50 to 6 00	Do.

*Declared value.

Argentine tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
20	Earthen, stone, and china ware—Continued.			
	Pitchers, with metal tops.....	Dozen	\$4 50 to \$7 50	25 per cent.
	Chamber-sets, three pieces	Set	3 00 to 6 90	Do.
	Butter-dishes	Dozen	2 00 to 3 00	Do.
	Mustard-dishes	do	1 00 to 2 00	Do.
	Basins	do	2 50 to 8 00	Do.
	Dinner plates	do	45 to 1 00	Do.
	Dessert plates	do	30 to 80	Do.
	Plates, with stand	do	1 50 to 3 50	Do.
	Powder-pots	do	1 50 to 3 00	Do.
	Cheese-dishes	do	2 00 to 3 50	Do.
	Pickle-dishes	do	1 00 to 5 00	Do.
	Salts	do	2 00 to 5 00	Do.
	Soup-dishes	do	7 50 to 18 00	Do.
	Cup and saucers	do	50 to 1 80	Do.
	Tea-pots	do	2 50 to 4 00	Do.
21	Fertilizers		(*)	Do.
22	Fish:			
	Fresh			Free.
	In brine	Kilo	1 45	25 per cent.
	Salmon:			
	In oil	do	65	Do.
	In tins	do	52	Do.
	Sardines:			
	In oil	do	37½	Do.
	In brine	do	13	Do.
	Cod	do	17	Do.
	Oysters, canned	do	40	Do.
	Anchovy	do	53	Do.
23	Flax, hemp, and jute manufactures:			
	Linens (or mixed with cotton)	Sq. meter	20 to 40	Do.
	Jute (or mixed with cotton)	Kilo	1 10	Do.
	Duck	do	45	Do.
	Table-cloths	do	1 80	Do.
	Stockings	do	10 00	Do.
	Handkerchiefs	Dozen	3 00	Do.
	Napkins	Kilo	1 80	Do.
	Towels and toweling	do	1 80	Do.
	Thread	do	1 00 to 2 00	Do.
24	Fruits:			
	Preserved	do	42	Do.
	Preserved in sirup	do	52	Do.
	Fresh, in tins	do	25	Do.
	In liquor	do	33	Do.
25	Furs		(*)	Do.
26	Glassware:			
	Castors, with wooden stand	Dozen	5 00 to 10 00	Do.
	Sugar-dishes	do	2 10 to 4 20	Do.
	Bottles	do	2 10 to 7 00	Do.
	Candlesticks	do	3 00 to 7 00	Do.
	Ice-cream dishes	do	70 to 1 50	Do.
	Wine-glasses	do	40 to 70	Do.
	Preserve-dishes	do	4 00 to 9 00	Do.
	Fruit-dishes	do	4 00 to 9 00	Do.
	Trays	do	2 50 to 6 00	Do.
	Flower-stands	do	(*)	Do.
	Pitchers	do	3 50 to 7 00	Do.
	Sets of three pieces	Set	(*)	Do.
	Butter-dishes	Dozen	2 00 to 4 00	Do.
	Mustard-dishes	do	1 00 to 2 00	Do.
	Flower-pots	do	1 50 to 3 00	Do.
	Punch-bowls	do	2 10 to 3 50	Do.
	Cheese-dishes	do	5 00 to 20 00	Do.
	Salt-stands	do	30 to 60	Do.
	Spittoons	do	2 50	Do.
	Tumblers	do	40 to 70	Do.
27	Glucose		(*)	Do.
28	Glue	Kilo	20	Do.
29	Gunpowder:			
	Ordinary	do	50	50 per cent.
	Fine	do	1 20	Do.
	Artillery	do	35	Do.
	Mining	do		Free.
30	Hair:			
	Human	do	20 00	25 per cent.
	Rabbit	do	35	Do.
	Other	do	(*)	Do.
32	Hides and skins:			
	Calf	Kilo	2 10 to 3 50	25 per cent.
	Goat	do	2 10 to 4 00	Do.

* Declared value.

Argentine tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
32	Hides and skins—Continued.			
	Kid	Dozen	\$8 50 to \$14 00	25 per cent.
	Sheep	do	7 00 to 14 00	Do.
	Hog	Each	3 00	Do.
	Lamb	Dozen	5 50 to 9 50	Do.
	Horse	Each	6 00 to 8 00	Do.
	Sole leather	Kilo	80 to 1 80	Do.
33	Honey	do	15	Do.
34	Hops	do	(*)	Do.
35	Ice	do	(*)	Do.
36	India-rubber manufactures:			
	Impermeable caps	Dozen	6 50 to 12 00	Do.
	Impermeable aprons	do	6 00	Do.
	Impermeable spatter-dashes	Pairs	1 60 to 3 20	Do.
	Impermeable gloves	Dozen prs.	2 75	Do.
	Impermeable cloth	Square meter.	80 to 1 20	Do.
	Impermeable boots	Pair	1 30	Do.
	Impermeable overcoats	Dozen	25 00	Do.
	Impermeable cloaks	Each	6 00	Do.
	Impermeable overshoes	Dozen	2 50 to 4 00	45 per cent.
37	Iron and steel manufactures:			
	Steel:			
	In bars	Kilo	80 to 1 20	Do.
	In sheets	do	09	Do.
	Needles	do	20	Do.
	Wire:			
	Common	do	06 to 08	Do.
	Galvanized	do	13	Do.
	Iron:			
	Hooks or brackets	do	07½	Do.
	Knockers	do	30	Do.
	Fish-hooks	do	62	Do.
	Rings and staples	do	13 to 18	Do.
	Spits	do	07½	Do.
	Adzes	do	50	Do.
	Scales, small	Dozen	8 00	Do.
	Scales, platform	Kilo	05	Do.
	Buckets	do	16	Do.
	Trays	do	42	Do.
	Tubs	do	20	Do.
	Vises	do	25	25 per cent.
	Boat-hooks	Dozen	4 50	Do.
	Anvils	Kilo	15	Do.
	Hinges	do	18 to 24	Do.
	Fire-pans	do	06	Do.
	Stew pans	do	19 to 20	Do.
	Chains	do	11	Do.
	Chains, galvanized	do	16	Do.
	Safes	do	20	45 per cent.
	Padlocks	do	41	25 per cent.
	Piping	do	06	Do.
	Coal-hods	Each	95 to 3 00	Do.
	Anchor-stocks	Kilo	10	Do.
	Bolts	do	50 to 80	Do.
	Chimneys	do	(*)	Do.
	Nails	do	09	Do.
	Knives and forks	Dozen	3 00 to 7 00	Do.
	Grain knives or sickles	do	12 00 to 25 00	Do.
	Stirrups	Kilo	25 to 1 00	Do.
	White iron	do	36	Do.
	Bridle-bits	Dozen	85 to 5 00	Do.
	Hooks	Kilo	16 to 25	Do.
	Rings	do	13	Do.
	Shackles	do	11	Do.
	Hatchets and axes	do	36	Do.
	Horseshoes	do	10	Do.
	Pots	do	08	Do.
	Pitchforks, &c.	do	30	Do.
	Shovels and tongs	Sets	1 00 to 4 00	Do.
	Chopping-knives	Dozen	1 24 to 4 00	Do.
	Fetters	do	4 00	Do.
	Printing presses	Each	(*)	5 per cent.
	Washing-machines	do	1 20 to 16 00	25 per cent.
	Sewing-machines	do	8 00 to 12 00	Do.
	Churning-machines	do	2 20 to 3 00	Do.
	Hammers	Kilo	35	Do.
	Coffee-mills	Dozen	5 00 to 6 00	Do.
	Steam-engines	do	(*)	5 per cent.
	Dishes and kettles	Kilo	5 to 36	25 per cent.
	Shovels	do	17 to 25	Do.

* Declared value.

Argentine tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
37	Iron and steel manufactures—Continued.			
	Iron—Continued.			
	Ladles and trowels	Dozen	\$1 50 to \$2 10	25 per cent.
	Gridirons	Kilo	31	Do.
	Curry-combs	Dozen	1 00	Do.
	Racks	Kilo	26 to 40	Do.
	Latches	do	31	Do.
	Nippers	Dozen	3 60	Do.
	Flat-irons	Kilo	70	Do.
	Iron posts and palings	do	36	Do.
	Tacks	do	11	Do.
	Scrapers	do	25	Do.
	Stands and tables	do	12 to 25	Do.
	Springs	do	30	Do.
	Rails for railways			Free.
	Castors	do	12 to 80	25 per cent.
	Spurs	do	60	Do.
	Nut crackers	Dozen	2 10	Do.
	Wheels for railways			Free.
	Frying-pans	Kilo	15 to 21	25 per cent.
	Tacks (wrought)	do	12	Do.
	Augers and gimlets	do	3 50 to 6 20	Do.
	Scissors	do	41 to 1 00	Do.
	Types	do	52	Do.
	Beams and girders	do	05	Do.
	Screws	do	15	Do.
	Axles	do	20	Do.
	Turning lathes	do	(*)	5 per cent.
	Rat-traps	do	20	25 per cent.
	Tripods	do	10	Do.
	Nuts	do	12	Do.
	Anvils	do	15	Do.
	Trucks and barrows	Each	5 00	Do.
38	Jewelry:			
	Jewelry and silverware		(*)	5 per cent.
	Alarm and striking clocks	Dozen	12 00 to 52 00	25 per cent.
	Cases for jewelry	do	3 70 to 6 20	Do.
	Precious stones unset:			
	Brilliantes	Grams	90 00	2 per cent.
	Emeralds	do	17 00	Do.
	Pearls	do	18 00	Do.
	Rubies	do	20 00	Do.
	Rose diamonds	do	59 00	Do.
	Sapphires	do	11 00	Do.
	Other	do	(*)	Do.
	Gold watches	Each	4 00 to 9 00	5 per cent.
	Nickel-plated watches	do	2 00 to 4 00	25 per cent.
	American wooden or zinc clocks	do	2 00 to 6 00	Do.
	Clocks, other classes	do	(*)	Do.
	Jewelers' utensils, &c.		(*)	Do.
	Glasses and crystals	Hundred	1 60	Do.
39	Lamps:			
	Bronze chandeliers for gas or kerosene	Kilo	1 60 to 3 00	Do.
	2 lights	Each	17 00	Do.
	3 lights	do	22 00	Do.
	4 lights	do	28 00	Do.
	5 to 6 lights	do	33 00	Do.
	7 to 10 lights	do	50 00	Do.
	Brackets, glass:			
	1 light	do	3 50	Do.
	2 lights	do	7 00	Do.
	3 lights	do	9 00	Do.
	Pendants, brass	Kilo	1 60 to 3 00	Do.
	Counter-weights for chandeliers	do	15	Do.
	Table lamps, glass or metal	Dozen	3 50	Do.
	Hand lamps, glass or metal	do	1 50	Do.
	Large mantle lamps		(*)	Do.
	Wicking	Kilo	1 50	Do.
	Tubes for wicks	Dozen	1 50 to 12 00	Do.
	Shades	do	1 50 to 3 00	Do.
	Receivers	do	2 10 to 4 00	Do.
	Reflectors	do	2 40	Do.
	Chimneys	do	38 to 1 50	Do.
40	Lead:			
	In sheets	Kilo	11	Do.
	In ingots or bars	do	09	Do.
	Pipe	do	15	Do.
	Shot and balls	do	10	50 per cent.
	Candlesticks	do	80	25 per cent.
	Cartridges	do	45 to 60	50 per cent.

* Declared value.

Argentine tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
41	Leather manufactures:			
	Saddles:			
	For men	Each	\$8 00 to \$18 00	45 per cent.
	For women	do	9 00 to 20 00	Do.
	Saddle-trees	Dozen	7 00 to 15 00	25 per cent.
	Harness:			
	Single	Each	30 00 to 40 00	45 per cent.
	Double	do	60 00	Do.
	Carriage whips	Dozen	1 50 to 5 00	25 per cent.
	Valises	Each	2 60 to 9 00	Do.
	Trunks	do	(*)	Do.
	Muzzles	Dozen	10 00	45 per cent.
	Cruppers	do	2 00	Do.
	Girths	do	6 50 to 12 00	Do.
	Girths, long	Pair	1 20	Do.
	Reins for bridles	Dozen	50	Do.
	Headstalls, bridles	do	1 50	Do.
	Collars	do	3 00 to 25 00	25 per cent.
	Portmanteaus	Each	3 50	Do.
	Martingales	do	1 50	45 per cent.
	Breast-straps	do	1 60 to 2 50	Do.
	Carriage reins	Dozen	5 80 to 28 00	Do.
42	Lime and cement:			
	Quicklime	100 kilos ..	2 10	25 per cent.
	Slack-lime	Hectoliter ..	73	Do.
	Italian cement	100 kilos ..	1 80	Do.
	Other cement	Hectoliter ..	73	Do.
43	Malt liquors:			
	Beer and ale:			
	In bottles	Dozen	2 32½	15 cts. per lit'r.
	In casks	Liter	16½	Do.
44	Medical instruments		(*)	25 per cent.
45	Naval stores:			
	Rosin	Kilo	07	Do.
	Tar	do	06½	Do.
	Turpentine	do	50	Do.
	Varnish	do	62	Do.
	Benzine, in tins	Liter	10	Do.
	Pitch	Kilo	07	Do.
46	Oil cake	do	(*)	Do.
47	Oils:			
	Animal	Kilo	(*)	Do.
	Mineral—kerosene, naphtha, and petroleum	Liter	07½	25 cts. per lit'r.
	Vegetable—olive, and other	Kilo	25 to 35	25 per cent.
48	Paraffine and wax	do	45 to 1 20	Do.
49	Paints	do	12 to 32	Do.
50	Paper:			
	Wall	do	22 to 2 00	Do.
	Wrapping	do	50	Do.
	Drawing	do	52	Do.
	Writing and printing	do	26	Do.
	Linen	do	85	Do.
	Straw	do	11	Do.
	For bags	do	16	Do.
	Bags	do	19	Do.
51	Plated ware:			
	Plated and electroplated:			
	Ordinary	do	2 00	Do.
	Good	do	4 00	Do.
	Electroplate:			
	Of Barton & Reed, Meriden Co	do	6 00	Do.
	Of Christofle	do	8 00	Do.
52	Provisions:			
	Fresh meats	do	54	Do.
	Hams	do		Free.
	Beef and pork, in brine	do	15	25 per cent.
	Bacon	do	45	Do.
	Oleomargarine	do	52	Do.
	Lard	do	32	Do.
	Butter	do	52	Do.
	Cheese	do	60	Do.
53	Quicksilver			Free.
54	Seeds			Do.
55	Soap	do	11 to 28	25 per cent.
56	Spirits:			
	High wines and alcohol:			
	In casks	Liter	15	15 cts. per lit'r.
	Bottled	Dozen	4 14	Do.

* Declared value.

Tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
56	Spirits—continued.			
	Bitters:			
	Angostura, bottled	Dozen	\$31 00	15 cts. per lit'r.
	Other brands, bottled	do	5 15	Do.
	In casks	Liter	42	Do.
	Champagne, bottled	Dozen	8 27	Do.
	Cognac:			
	Bottled	do	6 00	Do.
	In casks	Liter	36	Do.
	Gin:			
	Bottled	do	17	Do.
	In casks	do	13	Do.
	Snaps, bottled	Dozen	3 00	Do.
	Liqueurs:			
	Bottled	do	\$6 00 to 15 00	Do.
	In casks	Liter	50	Do.
	Rum:			
	Bottled	Dozen	8 00	Do.
	In casks	Liter	40	Do.
	Wines:			
	Port, madeira, sherry, and muscatel	Dozen	8 00	Do.
	Same, in casks	Liter	52	Do.
	Italian, common	do	10	Do.
	Rhein	do	50	Do.
	French and imitations, in casks	do	10½	Do.
	French and imitations, bottled	Dozen	6 00	Do.
	Whisky:			
	Bottled	do	4 20	Do.
	In casks	Liter	40	Do.
57	Starch	Kilog	20	5 cts. per kilo.
58	Sugar:			
	Refined	do	19	7 cts. per kilo.
	Unrefined	do	13	Do.
	Molasses	do	15	25 per cent.
59	Tin:			
	In bars or ingots	do	42	Do.
	In sheets	do	10	Do.
60	Tobacco:			
	Leaf, ordinary	do	32	55 per cent.
	Plug:			
	Black	do	41½	Do.
	Chewing	do	50	Do.
	Cut, smoking	do	1 03	Do.
	Cigars:			
	In boxes	do	2 00	50 per cent.
	Loose	do	2 50	Do.
	Cigarettes	do	2 00	Do.
61	Vegetables:			
	Fresh			Free.
	Onions	do	04	25 per cent.
	Potatoes	do	05	Do.
	Beans	do	06	Do.
	Peas	do	04½	Do.
	Put up in tins or bottles	do	40	Do.
62	Wood and its manufactures:			
	Cedar:			
	In boards	Sq. meter	60	Do.
	In beams	do	50	Do.
	White pine or spruce:			
	Boards	do	41	10 per cent.
	Planed	do	50	25 per cent.
	Pitch-pine:			
	Boards	do	50	10 per cent.
	Planed	do	58	25 per cent.
	Walnut or maple	do	1 00	Do.
	Mahogany	do	1 70	Do.
	Mahogany or walnut veneering	do	16	Do.
	Rosewood veneering	do	35	Do.
	Staves for barrels	do	(*)	5 per cent.
	Lepacho, quebracho, &c., in beams	do	20	25 per cent.
	Nandubury and algarrobo posts	Each	45	Do.
	Oars for boats	Pair	2 00	Do.
	Furniture:			
	Sideboards, according to quality	do	32 to 100 00	45 per cent.
	Piano-stools, according to quality	do	2 20 to 3 80	Do.
	Foot-stools, according to quality	do	1 30 to 2 00	Do.
	Foot-stools, American pine	Dozen	6 50 to 12 00	Do.
	Billiard tables	Each	(*)	Do.

* Declared value.

Tariff of custom-house values—Continued.

No.	Tariff classification.	Unit.	Custom-house or official value.	Rate of duty.
62	Wood and its manufactures—continued.			
	Bedsteads:			
	Double, according to quality.....	Each	\$32 00 to \$65 00	45 per cent.
	Single, according to quality	do	5 50 to 10 00	Do.
	Coffins, according to quality	do	(*)	Do.
	Chiffonniers, according to quality.....	do	25 00 to 45 00	Do.
	Commodes, according to quality	do	12 00 to 40 00	Do.
	Canopies, according to quality.....	do	3 50 to 10 00	Do.
	Center tables, according to quality	do	4 50 to 22 00	Do.
	Cradles and cribs, according to quality	do	3 50 to 12 00	Do.
	Cradles and cribs, American pine.....	Dozen	16 00	Do.
	Secretaries, according to quality.....	Each	8 50 to 78 00	Do.
	Book-cases, according to quality.....	do	28 00 to 50 00	Do.
	Music-stands, according to quality.....	do	3 00 to 10 00	Do.
	Otagas, American make	Dozen	40 00 to 70 00	Do.
	Cornices for curtains	Each	3 00 to 10 00	Do.
	Bedroomsets, consisting of bed, commode, washstand, stand, towel-rack, 4 chairs, rocking-chair, and night-table, Ameri- can make.	Set	52 00	Do.
	Same, with wardrobe	do	68 00	Do.
	Bed-room sets, consisting of bed, commode, washstand, wardrobe, and night table, American make.	Set	42 00	45 per cent.
	Furniture, veneered with rosewood, valued as rosewood.	Each		Do
	Washstands, according to quality.....	do	5 20 to 55 00	Do
	Workstands, according to quality.....	do	1 50 to 4 20	Do
	Dining tables, according to quality.....	do	20 00 to 35 00	Do
	Dining tables, American make.....	do	11 50	Do
	Night tables, according to quality.....	do	1 50 to 20 00	Do
	Carving tables, according to quality.....	do	15 00 to 45 00	Do
	Tables with marble tops.....	do	15 00 to 25 00	Do
	Clothes and hat racks or stands.....	do	2 60 to 9 00	Do
	Book shelves or stands.....	do	18 00 to 25 00	Do
	Wardrobes, according to quality.....	do	28 00 to 75 00	Do
	Chairs, American make:			
	Pine, painted.....	Dozen	5 00 to 30 00	Do
	Walnut.....	do	50 00	Do
	For parlor, pine.....	do	15 00	Do
	For parlor, walnut.....	do	60 00	Do
	For children, pine.....	do	5 00 to 15 00	Do
	For children, walnut.....	do	35 00	Do
	For office, pine.....	do	25 00	Do
	For office, walnut.....	do	40 00	Do
	Mahogany, rosewood, &c.....	do	40 00 to 85 00	Do
	Sofas:			
	Painted wood.....	Each	4 00 to 15 00	Do
	Mahogany, walnut, &c.....	do	14 00 to 24 00	Do
	Rosewood	do	20 00 to 30 00	Do
	Dressing tables, according to quality.....	do	5 20 to 9 00	Do
	Furniture not enumerated.....		(*)	Do
63	Wool.....	Kilogram	(*)	25 per cent.
64	Zinc:			
	Ingots	do	08	Do
	Sheets or strips.....	do	11	Do
	Bathing tubs.....	Each	1 20	Do
	Nails	Kilogram	20	Do
	Tubing and piping.....	do	15	Do

* Declared value.

The full tariff of the Argentine Republic was printed in Consular Reports No. 5, p. 379; the modifications in No. 35, p. 58.

BRAZIL.

Under the tariff system of Brazil certain rates of duty are established called "duties of consumption," to each and every one of which 60 per cent. is added. The rates given in this report are those of the said duties of consumption, *exclusive* of the 60 per cent. additional, which is the plan followed in the tariff publications of the Brazilian treasury department. It is to be noted also that under the recent emancipation law a further duty of 5 per cent. has since the first ultimo been collected on all general imposts, the object of the new tax being to provide a fund for the liberation of slaves.

In the case of tobacco there is a special impost of 40 per cent., so that on this article there are four rates of duty, levied in the following order: The original or basic rate, the 60 per cent. additional, the 40 per cent. special impost, and the 5 per cent. surtax.

Attention is also called to the following points in regard to this report:

(1) The rates of duty on brass and copper and their manufactures are given together, since the Brazilian tariff classification makes no separation of the two articles.

(2) In the case of plated ware no special and distinctive classification is provided by the tariff, the rates of duty coming under the head of those levied on various plated articles.

(3) The rate of exchange at which the currency conversions are made is 42 cents to the milreis—the rate now prevailing.

Customs duties collected on various articles at the port of Rio de Janeiro.

[Report of Vice-Consul-General Charles R. McCall.]

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
1	Agricultural implements.....		<i>Reis.</i> Free.....		
2	Animals:				
	Cattle of all kinds, hogs, horses, mules, and sheep.		do....		
	Ferocious.....	Each.....	20,000	Each.....	\$8.40
3	Art works, ad valorem.				
4	Bark and extracts:				
	Barks for medical and dyeing purposes:				
	Cinnamon and the like.....	Kilo.....	400	Pound.....	.08
	Oak, Brazil wood, quercitron (<i>Quercus tinctoria</i>) or American bark, Campeachy wood, sandal wood, guaiacum, sassafras, and any other kind suitable for tanning or dyeing.	do....	50	do....	.0095
	Not specified.....	do....	250	do....	.0475
	Extracts:				
	Pastel or gall-nut.....	do....	150	do....	.0285
	Campeachy wood, Brazil wood, &c.....	do....	90	do....	.0171
	Not specified.....	do....	400	do....	.076
5	Blackening:				
	Liquid.....	do....	60	do....	.0114
	In mass or powder.....	do....	200	do....	.038
6	Bones, hoofs, horns, &c:				
	Bones:				
	Cuttle-fish.....	do....	100	do....	.019
	Not classified.....	do....	50	do....	.0095
	Hoofs, horns:				
	Rhinoceros, unicorn, and sea-horse.....	do....	100	do....	.019
	Cattle.....	do....	20	do....	.0038
	Buffalo, deer, in mass.....	do....	40	do....	.0076
7	Books, maps, engravings, &c.:				
	Books:				
	Unbound or bound in pasteboard; lined with paper, cloth, leather, or skin; simple or with ornaments of any material except of silver or gold.	do....	100	do....	.019

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
7	Books, maps, engravings, &c.—Continued				
	Books—Continued.		<i>Reis.</i>		
	In ivory, mother-of-pearl, or tortoise-shell..	Kilo	2,000	Pound	\$0.38
	In silk, velvet, or wood	do	1,000	do	.19
	With ornaments of silver or gold, ad valorem				
	Maps:				
	Geographical, hydrographical, and the like.	do	100	do	.019
	Engravings	do	2,000	do	.38
8	Brass and copper:				
	In the Brazilian tariff classification the duties on brass and its manufactures are included under the head of Copper and manufactures; hence, duties on these articles must necessarily be given together.				
	In the rough or prepared, strained, in file-dust, in bars, hammered, in sheets, bottoms, or rolls, with or without combination with other metal.	do	180	do	.034
	Manufactures:				
	Needles	do	2,400	do	.45
	Table-plates, salvers, waiters, cruet-stands, liquor-stands, spoons, forks, and the like, for domestic use; basins, jars, and other toilet articles; card-stands, vases, and other articles for drawing-room tables, and of fancy; of copper or its compounds:				
	Simple	do	1,000	do	.19
	Silver plated, all or in part	do	1,800	do	.34
	Gilded in part or entirely	do	2,800	do	.53
	Cradles:				
	Simple	Each	5,000	Each	2.10
	Ornamented	do	10,000	do	4.20
	Jewelry, of any kind, plain, gilt, or silver-plated.	1 kilo	2,500	Pounds ...	.47
	Buttons of white or yellow metal:				
	With holes, for pants	do	400	do	.07
	For coats, uniforms, &c:				
	Simple, polished, or varnished, with emblem or lettering.	do	800	do	.15
	Gilt or silver-plated, with numbers, lettering, or emblems.	do	2,500	do	.47
	Nose-bands for horses	Each	250	Each	.105
	Padlocks:				
	Common	Kilo	700	Pound	.133
	With letters, secret locks	do	2,000	do	.38
	Chairs and stools:				
	Plain	Each	1,800	Each	.756
	With handwork or ornament	do	3,000	do	1.26
	With rockers, and others not classified.	do	5,000	do	2.10
	Beds:				
	Plain:				
	For one person	do	7,000	do	2.94
	For more than one person	do	12,000	do	5.04
	For children	do	5,000	do	2.10
	With ornaments:				
	For one person	do	15,000	do	6.30
	For more than one person	do	25,000	do	10.50
	For children	do	10,000	do	4.20
	Bells:				
	Common, for doors, clocks, animals, and the like.	Kilo	500	Pound	.095
	For tables and churches:				
	Plain, or polished simply	do	800	do	.152
	With handwork, gilded or silver-plated, and the like.	do	1,500	do	.285
	Fringes, galloons, cords, lace-work and similar objects, gilded or silver-plated or spangled.	do	1,800	do	.342
	Plates:				
	Smooth, for engraving purposes	do	300	do	.057
	Opened with a burin, with sculpturing, for commercial papers, &c.	do	10,000	do	1.90
	Idem, idem, for stamping purposes	do	2,500	do	.47
	Mounted upon other metal or wood	do	600	do	.11
	Collars, for animals	do	1,800	do	.34
	Rosaries, gilded or silver-plated	do	2,500	do	.47

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
8	Brass and copper—Continued.				
	Manufactures—Continued.		<i>Reis.</i>		
	Epaulettes, shoulder-straps, and the like....	Kilo	1,800	Pound	\$0.34
	Spurs:				
	Large, called "Chilian," and the like....	Dozen	6,000	Dozen	2.52
	Not specified.....	do	3,000	do	1.26
	Stirrups:				
	Filed	do	2,400	do	1.008
	Polished, with a spring.....	do	9,600	do	4.032
	Polished, without a spring	do	4,800	do	2.016
	For side-saddles.....	do	3,600	do	1.512
	Large or small, called <i>cacambas</i> or <i>estribas</i> .	do	12,000	do	5.04
	Locks:				
	With only one turn and without hole in the key.	Kilo	700	Pound	.13
	With two turns and secret ward, and others not classified.	do	1,200	do	.23
	Wire:				
	Of white or yellow metal	do	300	do	.06
	Covered with paper, cotton or rubber....	do	500	do	.10
	Gilt, silver-plated or covered with silk	do	1,000	do	.19
	Manufactured:				
	Pins, clasps for buttons, plain, galvanized, or varnished.	do	800	do	.15
	In cordage	do	180	do	.03
	Cages or rat-traps.....	do	1,200	do	.23
	Cloth:				
	In pieces or bolts.....	do	700	do	.13
	In any manufactures	do	1,200	do	.23
	Not classified.....	do	800	do	.15
	Sheets for gilding or silver-plating	do	2,500	do	.48
	Bridles of any kind:				
	Filed, with or without curb-chains	Each	500	Each	.21
	Polished, without curb-chains.....	do	900	do	.378
	Tinsel, white or colored	Kilo	1,000	Pound	.19
	Medals for collections, archaeological, and numismatical.	do	600	do	.11
	Powder-horns	do	1,000	do	.19
	Nails, tacks, rivets, and screws of any kind.	do	360	do	.07
	Tubes of copper.....	do	300	do	.6
	Any other manufactures not classified:				
	Filed or simply polished, varnished, bronzed, or galvanized, simple or ornamented with other ordinary metal.	do	600	do	.11
	Gilt or silver-plated in all or in part	do	1,200	do	.23
9	Breadstuffs:				
	Barley.....	do	020	do	.004
	Biscuits:				
	Ship-biscuits	do	010	do	.002
	Any other kind, crackers, &c	do	220	do	.04
	Indian corn:				
	White corn of Angola for birds' food.....	do	050	do	.01
	All other kinds.....	do	005	do	.001
	Oats.....	do	010	do	.002
	Rye.....	do	020	do	.004
	Wheat.....	do	Free	do	
	Flour.....	do	010	do	.002
10	Bricks.....				
11	Brooms and brushes:				
	Brooms of any kind	Dozen	2,400	Dozen	1.008
	Brushes, of hair:				
	With handles or backs entirely of ivory, mother-of-pearl, or tortoise-shell:				
	For clothes, hats, and the head, &c....	do	26,000	do	10.92
	For nails, teeth, cleaning combs, &c....	do	4,000	do	1.68
	With handles or backs of horn or wood, with or without ornament:				
	For cleaning metal, &c.....	do	300	do	.126
	For clothes, hats, hair	do	2,400	do	1.008
	For teeth, nails, combs, and beard	do	600	do	.252
	For cleaning tables, scouring houses, &c.....	do	2,400	do	1.008
	For shoes, harness, and animals with or without <i>alça</i> (strap).	do	600	do	.252
	Not specified.....	do	800	do	.336
	Brushes, of straw:				
	For clothes, hats, and hair.....	do	2,400	do	1.008

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
11	Brooms and brushes—Continued.				
	Brushes of straw—Continued.				
	For animals, with or without handles	Dozen	600	Dozen	\$0.252
	For other uses	do	1,200	do	.504
	Brushes, for friction, &c.....	do	2,400	do	1.008
12	Candles:				
	Wax	do	700	do	.294
	Spermaceti.....	do	400	do	.168
	Tallow.....	do	180	do	.075
	Stearine	do	400	do	.168
	Paraffine	do	400	do	.168
13	Carriages and horse-cars, 40 per cent. ad valorem.				
14	Cars (railroad, steam), 10 per cent. ad valorem.				
15	Chemicals:				
	Acetates:				
	Of alumina.....	Kilo	200	Pound.....	.04
	Of ammonia or of ammoniacal solution or solid.....	do	150	do	.03
	Of lead, liquid or crystallized, salt or vinegar of lead or of saturn.....	do	200	do	.04
	Of copper:				
	Ammoniacal	do	3,000	do	.57
	Crystallized or in powder	do	150	do	.03
	Of silver	Gram	030	Gram.....	.012
	Of cobalt	Kilo	6,000	Pound	1.14
	Of iron	do	150	do	.03
	Of any other metal not specified.....	do	600	do	.11
	Of alkaloids or organic bases, such as morphia, quinine, and the like.....	Gram.....	040	Gram.....	.016
	Acids:				
	Acetic, strong or crystallizable, and free from acetate of copper.....	Kilo	100	Pound.....	.02
	Arsenical or white oxide of arsenic.....	do	050	do	.01
	Benzoic	do	1,600	do	.30
	Bromic	do	1,000	do	.19
	Perchloric	do	2,000	do	.38
	Formic	do	1,200	do	.23
	Hydrochloric or muriatic:				
	Pure or without color.....	do	050	do	.01
	Impure or colored.....	do	010	do	.02
	Iodic, pure	do	2,000	do	.38
	Lactic	do	1,300	do	.25
	Nitric:				
	Pure or uncolored	do	060	do	.01
	Impure or colored	do	020	do	.004
	Oxalic	do	050	do	.009
	Phenic or carbolic	do	400	do	.08
	Phosphoric:				
	Solid or glacial	do	800	do	.15
	Liquid.....	do	100	do	.02
	Prussic, hydrocyanic or cyanhydric.....	do	800	do	.15
	Pyroacetic or wood-vinegar	do	040	do	.008
	Sulphuric, oil or spirit of vitriol:				
	Pure or uncolored	do	050	do	.009
	Impure, of commerce.....	do	005	do	.0009
	Sulphuric, liquid	do	050	do	.009
	Tartaric	do	150	do	.03
	Valerianic.....	do	3,000	do	.57
	Not specified	do	450	do	.09
	Aconite	Gram.....	150	Gram.....	.063
	Waters:				
	English	Kilo	500	do	.095
	Distilled:				
	Of flowers, oranges, roses, lettuce(wild)	do	240	do	.045
	Not specified	do	500	do	.095
	Mineral, natural or artificial, of any kind	do	100	do	.02
	Of woundwort	do	600	do	.11
	Albumina, animal and dry.....	do	1,000	do	.19
	Alkaloids, or organic bases, natural or artificial, and their salts not classified.....	Gram.....	040	Gram.....	.016
	Alcohol:				
	Potato oil	Kilo	600	Pound.....	.11
	Methylated of wood spirits.....	do	300	do	.057
	Gun-cotton	do	2,500	do	.475
	Alumina, dry or gelatine.....	do	1,600	do	.30
	Amber, grey or ash color.....	Gram.....	100	Gram.....	.042
	Ammonia, liquid, volatile or spirit of salt ammonia.....	Kilo	100	Pound.....	.02

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
15	Chemicals—Continued.				
	Antimoniates:		<i>Reis.</i>		
	Of simple potassium or diaphoretic antimony.	Kilo	600	Pound	\$0.11
	Of quinine and of other alkaloids not specified.	Gram	040	Gram	.016
	Medicinal roots of any kind	Kilo	400	do	.08
	Arsenate of potassium or soda:				
	Pure	do	800	do	.15
	Impure, for arts and industries	do	150	do	.03
	Arsenate:				
	Of silver	Gram	030	do	.012
	Of any other metals not specified	Kilo	1,200	Pound	.23
	Of alkaloids or organic bases, as of quinine, morphine, and others.	Gram	040	Gram	.016
	Sugar of milk	Kilo	600	Pound	.11
	Balsam, manipulated, not specified	do	1,000	do	.19
	Benzine	do	100	do	.02
	Benzoates:				
	Metallic, of any kind	do	5,000	do	.95
	Of quinine and other organic basis	Gram	040	Gram	.016
	Biscuit, medicinal, of any kind	do	600	do	.11
	Balls of Nancy	do	600	do	.11
	Borates:				
	Of silver	Gram	030	Gram	.012
	Of soda (sub or bi) or borax molded or crystallized.	Kilo	100	Pound	.02
	Of any other metal not specified	do	1,500	do	.285
	Of alkaloids, such as quinine, morphine and others.	Gram	040	Gram	.016
	Bromal hydrates	Kilo	6,000	Pound	1.14
	Reacting chemicals for use of laboratories, 10 per cent. ad valorem.				
	Cantharides	do	1,800	do	.34
	Capsules and medicinal confections of any kind	do	1,200	do	.23
	Cantharadine	Gram	100	Gram	.042
	Carbonates:				
	Of ammonia alkali, volatile, concrete, or sesqui carbonate of ammonia	Kilo	110	Pound	.0209
	Of bismuth	do	2,000	do	.38
	Of cadmium	do	6,000	do	1.14
	Of lead or white lead	do	040	do	.008
	Of iron	do	200	do	.04
	Of magnesia	do	200	do	.04
	Of lithia	do	5,000	do	.95
	Of potassium:				
	Impure, Dantzic, pearl-ash, or commercial	do	010	do	.002
	Purified, salt of tar or vegetable alkali	do	100	do	.02
	Bicarbonate of potassium	do	150	do	.03
	Silver	Gram	030	Gram	.012
	Of soda or mineral alkali:				
	Ordinary, or dark, or unmanufactured	Kilo	010	Pound	.002
	White, refined, purified, in crystals	do	050	do	.0095
	Bicarbonate of soda	do	100	do	.02
	Of zinc:				
	Pure or precipitated	do	500	do	.095
	Impure, natural, or calamine stone, prepared	do	150	do	.03
	Of other metals not specified	do	1,000	do	.19
	Of alkaloids	Gram	040	Gram	.016
	Charcoal, vegetable, pure, or medicinal, for electric lighting of any kind.	Kilo	600	Pound	.11
	Castoreum, powdered or whole	do	6,000	do	1.14
	Beer, medicinal of any kind	do	300	do	.057
	Chloral, of any kind	do	2,000	do	.38
	Chlorate:				
	Of potassium and soda	do	200	do	.038
	Of any other metal	do	800	do	.15
	Of alkaloids	Gram	040	Gram	.016
	Chloroform	Kilo	1,400	Kilo	.266
	Chlorodyne	do	4,000	do	.76
	Salt of Boutigny	do	6,000	do	1.14
	Chlorates, hydrochlorates, muriates:				
	Of ammonia	do	150	do	.03
	Of ammonia and mercury, or ammonia and iron, or flour of salt of ammonia.	do	1,000	do	.19

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
15	Chemicals—Continued. Chlorates, hydrochlorates, muriates—Continued. Butter of antimony:		<i>Reis.</i>		
	Liquid	Kilo	500	Kilo	\$0.095
	Solid or concrete	do	800	do	.15
	Of bismuth	do	2,000	do	.38
	Of cadmium	do	10,000	do	1.90
	Of lime or hypochlorate of lime	do	050	do	.0095
16	Clocks and watches:				
	Watches:				
	Copper and its combinations	Each	1,000	Each	.42
	Silver	do	1,200	do	.50
	Gold-plated	do	1,500	do	.63
	Gold	do	2,400	do	1.00
	Clocks:				
	Alarm:				
	Small, of white or yellow metal	do	1,000	do	.42
	Not specified, 30 per cent. ad valorem.	do		do	
	Ship chronometers	do	20,000	do	8.40
	Not specified, 30 per cent. ad valorem.	do		do	
17	Coal	Free.			
18	(See No. 8.)				
19	Cotton, manufactures of:				
	Hat brims	Kilo	300	Pound	.057
	Lacing, tassels, head-wear, dress ornaments, and the like.	do	2,400	do	.456
	Rugs and carpets	do	600	do	.11
	Flannels and shag	do	600	do	.11
	Caps and coiffs:				
	Of knit-work	do	3,000	do	.57
	Not specified, 30 per cent. ad valorem.	do		do	
	Cotton-velvet, and bombazine	do	1,500	do	.285
	Caps for men	Each	300	Each	.12
	Buttons	Kilo	900	Pound	.17
	Braid or edging of any kind	do	800	do	.15
	Covers for hats, pianos, &c.	do	1,000	do	.19
	Muslin and cambric:				
	Coarse smooth, white or colored, for lining:	do	800	do	.15
	Embroidered by hand or machine:				
	Not exceeding in weight 4 kilograms per 100 meters.	do	5,000	do	.95
	Exceeding 4 kilograms per 100 meters.	do	2,500	do	.475
	In cuts for dresses, coifs, and skirts.	do	10,000	do	1.90
	Any other kind:				
	Not exceeding in weight 4 kilograms per 100 meters.	do	5,000	do	.95
	Exceeding 4 kilograms per 100 meters.	do	2,500	do	.475
	In cuts for dresses, coifs, and skirts.	do	6,000	do	1.14
	Shawls, handkerchiefs, mantles, cloaks, and ponchos:				
	Common, thick or merino, muslin, satinet, or any other fabric.	do	1,200	do	.23
	Of lace, 30 per cent. ad valorem.	do		do	
	Hats:				
	Plain	Each	400	Each	.16
	Ornamented	do	600	do	.25
	Cigar and cigarette holders	Kilo	3,500	Pound	.665
	Girths	Each	300	Each	.12
	Quilts, stuffed with cotton	Kilo	600	Pound	.11
	Bed covering, with or without mixture of wool:				
	White, dark, or striped, with or without fur.	do	320	do	.06
	Embroidered or damasked, imitating fustian and the like.	do	750	do	.14
	Umbrella covers	do	650	do	.12
	Cords, plats, and stay-bands:				
	Imitating straw for ornaments of hats.	do	5,000	do	.95
	Of any other kind	do	800	do	.15
	Corsets	Each	1,200	Each	.50
	Lace:				
	Of knit-work:				
	Smooth, plain:				
	Not exceeding in weight 4 kilograms per 100 meters.	Kilo	7,000	Pound	1.33
	Exceeding 4 kilograms per 100 meters.	do	2,500	do	.475
	Ornamented or embroidered	do	7,000	do	1.33
	Gummed, for lining hats	do	1,500	do	.285
	Not specified	do	2,500	do	.475

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
19	Cotton, manufactures of—Continued.				
	Linings and pointed strips for hats:		<i>Reis.</i>		
	Simple	Kilo	1,000	Pound	\$0.19
	Gummed or oiled	do	600	do	.11
	Fustians and satinets:				
	Plain	do	1,500	do	.285
	Embroidered	do	1,800	do	.34
	Galloons, ribbons, and fringes	do	2,500	do	.475
	Cravats, plain or embroidered	Dozen	600	Dozen	.25
	Holland, raw, white or colored	Kilo	600	Pound	.11
	Sheets, spreads, pillow-cases, towels, and napkins:				
	Embroidered with lace, 30 per cent. ad valorem.				
	Smooth, duties are the same as those on the respective cloths or goods.				
	Lawns and half lawns	do	300	do	.057
	Gloves:				
	Common	Dozen pair	700	Dozen pair	.39
	Any other kind	do	1,800	do	.75
	Saddle blankets:				
	Of fabrics of <i>xerga</i> (a kind of coarse cotton cloth).	Kilo	500	Pound	.095
	Of any other fabric	Each	500	Each	.21
	Mantles, chemises, and other articles of fashion, of lace or other fabric, 30 per cent. ad valorem.				
	Socks and stockings:				
	Of Scotch thread:				
	Short:				
	Up to 20 centimeters long in the foot.	Dozen pair	1,200	Dozen pair	.50
	More than 20 centimeters long in the foot.	do	2,400	do	1.00
	Long:				
	Up to 20 centimeters long in the foot.	do	2,400	do	1.00
	More than 20 centimeters long in the foot.	do	4,800	do	2.02
	Not classified:				
	Short:				
	Up to 20 centimeters long in the foot.	do	300	do	.12
	More than 20 centimeters long in the foot.	do	600	do	.25
	Long:				
	Up to 20 centimeters long in the foot.	do	600	do	.25
	More than 20 centimeters long in the foot.	do	1,200	do	.50
	Oil-cloths	Kilo	500	Pound	.095
	Thin goods:				
	Starched, ordinary, white, colored, or dyed, for lining only; varnished, transparent, suitable for plans and maps.	do	600	do	.11
	Not classified:				
	Smooth:				
	White	do	600	do	.11
	Colored or prints	do	1,200	do	.23
	Embroidered, striped, &c	do	1,500	do	.285
	Cloth:				
	Common, smooth or twilled	do	400	do	.08
	Bleached or colored, smooth or twilled	do	600	do	.11
	Embroidered or damasked	do	1,200	do	.23
	Napped, for towels and napkins	do	600	do	.11
	Striped, for pouches	do	900	do	.17
	Tablecloths:				
	Embroidered, 30 per cent. ad valorem.				
	Not classified	do	1,200	do	.23
	Hammocks of any kind	do	1,200	do	.23
	Laces of cotton or of cotton mixed with wool or linen:				
	Valenciennes, &c	do	10,000	do	1.90
	Any other kind	do	4,000	do	.76
	In patterns or ornaments for dresses, veils, &c., 30 per cent. ad valorem.				
	Stripes and checks:				
	Up to 12 threads in 5 millimeters	do	600	do	.11
	More than 12 threads in 5 millimeters	do	1,200	do	.23
	Embroidered or damasked	do	1,500	do	.285

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
19	Cotton, manufactures of—Continued.				
	Ready-made clothing:				
	Shirts:				
	Knit:		Reis.		
	Common, for working class	Dozen	1,000	Dozen	\$0.42
	Any other kind	do	2,000	do	.84
	Any other make:				
	Smooth or folded	do	4,500	do	1.89
	Smooth or folded, with linen breasts	do	8,500	do	3.57
	Drawers:				
	Knit, including bathing drawers	Dozen	2,000	Dozen	.84
	Of any other fabric or make	do	3,600	do	1.51
	Collars for shirts	do	600	do	.25
	Breasts for shirts, smooth or folded	Kilo	2,000	Pound	.38
	Cuffs for shirts	Doz. pair	900	Doz. pair	.38
	Not classified:				
	Knit work	Kilo	2,000	Pound	.38
	Lace, 30 per cent. ad valorem.				
	Any other kind or fabric, duties are double those on the respective fabrics.				
	Embroidered or ornamented, 30 per cent. ad valorem.				
	Shoes, small, without soles, for children, simple or embroidered.	Pair	100	Pair	.04
	Suspenders, belts, and garters, plain or embroidered.	Kilo	2,600	Pound	.494
	Lamp-wicks, plain or close-woven	do	500	do	.095
	Window-shades	Each	1,000	Each	.42
	Scraps	Kilo	010	Pound	.002
	Veils:				
	Embroidered, 30 per cent. ad valorem.				
	Not classified, the duties are the same as those on the respective fabrics.				
	Gauze and the like, woven, with false gold or silver.	do	2,000	do	.38
	Blue cotton cloth (<i>zuarie</i>)	do	600	do	.11
	Raw cotton:				
	In the seed	do	060	do	.011
	Lint	do	150	do	.03
	Yarn:				
	Simple, for weaving or knitting, white or colored.	do	100	Pound	.02
	Twisted or plaited, for wicks	do	100	do	.02
	Twisted thread of any kind, in spools or balls, for crocheting, &c.	do	600	do	.11
20	Earthen, stone, and china ware:				
	Earthenware:				
	Of porcelain or kaolin	do	020	do	.004
	Not specified	do	400	do	.08
	Stoneware:				
	Simple	do	050	do	.0095
	Ornamented, painted, stamped	do	080	do	.016
	Enameled, black, of Japan stone and the like, or of any stone with any kind of gilding.	do	150	do	.03
	Chinaware:				
	Simple white	do	200	do	.04
	Ornamented, stamped, painted, or enameled	do	300	do	.057
	Painted, stamped, or enameled with gilding of any kind, and what is called "biscuit ware."	do	600	do	.11
21	Fertilizers		Free		
22	Fish:				
	Not classified, oysters, shell-fish, and other molluscs and spawn:				
	Salted, dried, or pickled	Kilo	020	Pound	.004
	Preserved, in whatever manner prepared	do	300	do	.057
23	Flax, hemp, and jute manufactures:				
	Flax and hemp:				
	In the rough	do	002	do	.0004
	Prepared, dressed, combed, or in "strikes," colored or painted.	do	005	do	.08095
	In thread:				
	Simple, for woof or warp, raw, white, or colored.	do	150	do	.02

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
23	Flax, hemp, and jute manufactures—Continued. Flax and hemp—Continued.		<i>Reis.</i>		
	Twisted, as sewing thread of any qual- ity, in spools, skeins, or clews, for sewing, crocheting, and the like.	Kilo	600	Pounds ...	\$0.11
	For shoemakers' use	do	180	do	.034
	Tow in the rough or in branches (<i>rama</i>) ..	do	005	do	.00095
	Thread for wounds, simple or in sheets (<i>pasta</i>).	do	200	do	.04
24	Fruits, preserved:				
	Green chestnuts, filberts, cocoanuts, other nuts, and olives of all kinds.	do	050	do	.0095
	Dried raisins of all kinds	do	100	do	.02
	Any fruits, cocoanuts, nuts, classified or not:				
	Preserved in spirits, sirup, or jelly	do	300	do	.057
	Preserves, dry or without juice, and crys- tallized or prepared in any other way.	do	500	do	.095
25	Furs of hares, rabbits, beavers, &c	do	120	do	.023
26	Glass and manufactures:				
	In fragments, rough or broken	Free			
	In bulk:				
	Conical or in tubes, for cutting, smoothing, and polishing.	Kilo	800	do	.15
	Cut, smoothed, and polished, or false stones.	do	4,000	do	.70
	For windows or sky-lights:				
	White, smooth	do	040	do	.008
	Colored	do	130	do	.024
	Thick, for ships, &c	do	130	do	.024
	In plates or sheets:				
	Polished, without steel:				
	Up to 3 millimeters of thickness:				
	Up to 20 decimeters of surface	do	015	do	.0028
	More than 20 and up to 50	do	030	do	.006
	More than 50 and up to 100	do	050	do	.0095
	More than 100 and up to 200	do	075	do	.014
	More than 200	do	110	do	.021
	More than 3 millimeters of thickness:				
	Up to 20 decimeters of surface	do	025	do	.0047
	More than 20 to 50 decimeters	do	050	do	.0095
	More than 50 to 100 decimeters	do	075	do	.014
	More than 100 to 200 decimeters	do	110	do	.021
	More than 200 decimeters	do	160	do	.03
	Polished, with steel:				
	Up to 3 millimeters of thickness:				
	Up to 20 decimeters of surface	do	025	do	.0047
	More than 20 decimeters to 50	do	050	do	.0095
	More than 50 to 100 decimeters	do	075	do	.014
	More than 100 to 200 decimeters	do	110	do	.021
	More than 200 decimeters	do	160	do	.03
	More than 3 millimeters of thickness:				
	Up to 20 decimeters	do	035	do	.007
	Up to 50 decimeters	do	080	do	.016
	More than 50 up to 100 decimeters	do	120	do	.023
	More than 100 up to 200 decimeters	do	160	do	.03
	More than 200 decimeters	do	220	do	.041
	Needle-cases, bracelets, ear-rings, breast-pins	do	2,500	do	.475
	Buttons	do	400	do	.076
	Rosaries and beads:				
	Strung with satin, white or colored, in im- itation of pearls, &c., hollow or fine.	do	2,000	do	.38
	In imitation of precious stones, molded, painted, polished, or perfumed.	do	600	do	.11
	Not classified	do	2,500	do	.475
	Crowns and other ornaments for tombs	do	2,000	do	.38
	Enamel:				
	Fine, for jewelers' use	do	2,600	do	.494
	Ordinary or vitrified cobalt for pottery	do	1,200	do	.23
	Flasks:				
	For cologne, vases and jars for flowers, fig- ures, &c.	do	800	do	.15
	For any other articles of luxury	do	1,200	do	.23
	Of ordinary dark glass:				
	Without stopper or ornamental mouth	do	030	do	.006
	With stopper or ornamental mouth	do	050	do	.0095
	Of ordinary glass, white, greenish or bluish:				
	Without stopper or ornamental mouth	do	060	do	.011
	With stopper or ornamental mouth	do	100	do	.02

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
26	Glass and manufactures—Continued.				
	Flasks—Continued.		<i>Reis.</i>		
	Bottles or flasks covered with hide or linen.	Kilo	400	Pound	\$0. 08
	Bottles or flasks covered with straw or vine.	do	060	do	. 011
	Lusters, chandeliers, branched candlesticks.	do	1,000	do	. 19
	Files of any kind.	do	070	do	. 013
	Manufactures, not classified:				
	For table service:				
	Class No. 1	do	200	do	. 38
	Class No. 2	do	380	do	. 07
	For other uses:				
	Class No. 1	do	300	do	. 057
	Class No. 2	do	600	do	. 11
27	Glucose	do	060	do	. 011
28	Glue or gelatine of any kind	do	400	do	. 08
29	Gunpowder of any kind	do	400	do	. 08
30	Hair:				
	Human hair, in the rough	do	6,000	do	1. 14
	Horse-hair, or hair of any other animal	do	120	do	. 023
	Human-hair manufactures:				
	Wigs, braids, or other manufactures for hair-dressers	do	18,000	do	3. 42
	Rings, chains, watch-guards, bracelets, and the like, with or without ornament	do	50,000	do	9. 50
	Bristles for shoemakers' use	do	400	do	. 08
31	Hay or any other forage	do	010	do	. 002
32	Hides and skins, raw, of any kind:				
	Green	do	050	do	. 0095
	Dry or salted	do	080	do	. 016
33	Honey	do	160	do	. 03
34	Hops	do	080	do	. 016
35	Ice	do	002	do	. 00038
36	India-rubber manufactures:				
	Basins and other domestic utensils	do	800	do	. 15
	Walking-sticks, whips, and the like	do	1,500	do	. 285
	Tobacco-pouches	do	1,200	do	. 23
	Dolls and other toys	do	1,000	do	. 19
	Buttons of any kind	do	1,200	do	. 23
	Shoes	do	800	do	. 15
	Belts, suspenders, and the like:				
	Covered with silk	do	8,000	do	1. 50
	Covered with any other goods or material	do	2,000	do	. 38
	Funnels, stoppers, and bottles	do	800	do	. 15
	Fans	Each	1,000	Each	. 42
	Combs and pen-holders	Kilo	1,200	do	. 23
	Prepared or in bulk:				
	For dentists' use	do	1,000	do	. 19
	For office use	do	600	do	. 11
	Bracelets, ear-rings, medals, and other ornaments	do	3,000	do	. 57
	Woven with cotton, wool, or linen goods:				
	In pieces	do	1,200	do	. 23
	In manufactures not classified	do	1,800	do	. 342
	Woven with pure silk, or mixed with any other material:				
	In pieces	do	1,800	do	. 342
	In manufactures not classified	do	2,500	do	. 475
	Tubes, thread, sheets	do	300	do	. 057
	Not classified, ad valorem.				
37	Iron and steel:				
	Iron:				
	Flat iron	do	004	do	. 00076
	In bars, sheets, hoops, and arches of any kind	do	010	do	. 002
	In coarse filings	do	030	do	. 0057
	Steel, in small or large rods or in bars	do	025	do	. 00475
	Manufactures of iron and steel:				
	Needles:				
	Small, for sewing, crocheting machines, &c	do	1,500	do	. 285
	Not classified	do	1,200	do	. 23
	Axles, and boxes for same	do	200	Pound	. 038
	Curry-combs	do	150	do	. 0285
	Cables, large and small	do	080	do	. 015
	Anchor, large and small, and grapnels	do	060	do	. 011
	Fish-hooks	do	1,000	do	. 19
	Saddle-bows	Each	500	Each	. 21

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
37	Iron and steel—Continued.				
	Iron—Continued.				
	Rings:		<i>Reis.</i>		
	For keys	Kilo	1,800	Pound	\$0.342
	For any other use	do	200	do	.038
	Waiters, painted or varnished, with or without ornament.	do	500	do	.095
	Curb-chains	do	600	do	.11
	Cradles:				
	Simple	Each	1,500	Each	.63
	Ornamented	do	3,000	do	1.26
	Gas-burners	Kilo	700	Pound	.133
	Steel jewelry	do	2,500	do	.475
	Jew's-harps	do	400	do	.08
	Bridle-bits	Each	150	Each	.06
	Buttons:				
	For pants	Kilo	300	Pound	.057
	Not specified	do	800	do	.15
	Arms for steelyards	do	300	do	.057
	Safes:				
	Up to 50 centimeters in length	Each	20,000	Each	8.40
	More than 50, up to 75	do	40,000	do	16.80
	More than 75, up to 100	do	80,000	do	33.60
	More than 100, up to 125	do	120,000	do	50.40
	More than 125, up to 150	do	160,000	do	67.20
	More than 150, up to 175	do	200,000	do	84.00
	More than 175	do	240,000	do	90.80
	Nose-bands for animals	do	200	do	.084
	Padlocks:				
	Common	Kilo	300	Pound	.057
	With secret wards or letters	do	1,000	do	.19
	Chairs and stools:				
	Smooth or simple	Each	1,200	Each	.50
	With chasing or ornament	do	1,800	do	.75
	With rockers, or any others not speci- fied.	do	6,000	do	2.52
	Beds:				
	Simple:				
	For one person	do	2,500	do	1.05
	For more than one person	do	4,500	do	1.89
	For children	do	1,500	do	.63
	Ornamented:				
	For one person	do	5,000	do	2.10
	For more than one person	do	9,000	do	3.78
	For children	do	3,000	do	1.26
	Plates:				
	For corset and dress stays	Kilo	600	Pound	.11
	Chased for letters, commercial papers, &c.	do	8,000	do	1.52
	Chased for making stamps	do	2,000	do	.38
	Galvanized for covering houses	do	020	do	.004
	Not specified	do	800	do	.15
	Keys, not classified	do	300	do	.057
	Spoons and forks	do	240	do	.045
	Collars for animals	do	600	do	.11
	Weight-holders for steelyards	do	300	do	.057
	Chains:				
	For steelyards, or with rings for fasten- ing animals and the like.	do	120	do	.023
	In piece, or manufactured in any way not specified.	do	400	do	.08
	Horseshoe nails	do	150	do	.028
	Thimbles	do	400	do	.08
	Hinges of any kind	do	100	do	.02
	Tenter-hooks:				
	With flower work	do	400	do	.08
	Simple, of any form or make	do	150	do	.028
	Spurs:				
	Large, called Chilians, and the like ...	Doz. pairs.	3,600	Doz. pairs.	1.51
	Not specified	do	2,400	do	1.
	Stirrups:				
	Smoothed, galvanized, or varnished	do	1,200	do	.50
	Polished:				
	With spring	do	6,000	do	2.52
	Without spring	do	3,600	do	1.51
	For side-saddles	do	1,800	do	.75
	With toe-fenders	do	6,000	do	2.52

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
37.	Iron and steel—Continued.				
	Iron—Continued.				
	Locks:		Reis.		
	With only one turn or ward.....	Kilo	200	Doz. pairs.	\$0.038
	With two turns, and others not classified.	do	600	do	.11
	Foot-bolts, for doors of any kind.....	do	120	do	.023
	Wire:				
	Of any kind or thickness, simple.....	do	030	do	.0057
	Covered with paper, silk, or cotton	do	400	do	.03
	Galvanized, for fences.....	do	050	do	.0095
	Buckles:				
	Of iron, simple, galvanized, or varnished	do	500	do	.095
	Of iron or steel, polished for shoes, belts, dresses, or any other use.	do	900	do	.17
	Stoves	do	050	do	.0095
	Tin:				
	In sheets.....	do	050	do	.0095
	Made into any kinds of goods, not classified:				
	Simple	do	300	do	.057
	Painted or varnished, with or without ornaments of copper, zinc, &c.	do	600	do	.11
	Bridles:				
	Galvanized, with or without curb-chain.	Each	300	Each	.12
	Polished, with or without curb-chains	do	600	do	.25
	Steel for tinder-boxes	do	400	do	.16
	Tables:				
	Smooth or simple.....	do	1,200	do	.50
	Ornamented.....	do	2,400	do	1.00
	Springs for doors, gratings, and other uses.	Kilo	200	Pound.....	.038
	Screws:				
	Large, for beds, &c.....	do	100	do	.02
	Not specified	do	200	do	.038
	Pens.....	do	2,600	do	.494
	Censers and braziers.....	do	300	do	.057
	Tin plates.....	do	200	do	.038
	Nails, tacks, and rivets:				
	Simple	do	060	do	.011
	With copper or bone heads.....	do	200	do	.038
	With ivory heads	do	2,400	do	.456
	Knobs, for doors, of any kind.....	do	600	do	.11
	Pulleys	do	200	do	.038
	Sofas:				
	Smooth or simple.....	Each	1,800	Each	.75
	Ornamented.....	do	3,600	do	1.51
	Rails:				
	For railroads.....		Free.....		
	For warehouses and like uses	Kilo	010	Pound	.024
	Pipes:				
	Plated, for boilers, gas, and the like.....	do	030	do	.012
	Cast, for water, gas, &c.....	do	020	do	.008
	Casts:				
	Simple	do	050	do	.002
	Painted, varnished, or galvanized with any ordinary metal.	do	100	do	.02
	Enameled	do	200	do	.038
	Plated with gold or silver.....	do	400	do	.08
	Hammered:				
	Simple	do	100	do	.02
	Painted, varnished, or galvanized with any common metal.	do	200	do	.038
	Enameled	do	300	do	.057
	Plated with gold or silver.....	do	400	do	.08
	In pieces for building houses, vessels, bridges, fences, and the like, 10 per cent. ad valorem.				
38	Jewelry:				
	Gold:				
	With diamonds, rubies, sapphires, pearls, emeralds, or opals, 5 per cent. ad valorem.				
	Of any kind, simple or filagreed, or with coral, or with fine stones, not specified, or with false stones.	Gram	050	Gram	.02
	Silver:				
	Smooth, plated, stamped, enameled, or with false stones, simple or gilded and filagreed.	do	005	do	.002

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
38	Jewelry—Continued.				
	Silver—Continued.				
	Of any other kind, with mosaics, corals, pearls, fine stones, and other ornaments, 5 per cent. ad valorem.		Reis.		
	In other manufactures not classified	Gram	005	Gram	\$0.002
	Platina, manufactured in any way	do	050	do	.22
39	Lamps	Kilo	600	Pound	.11
40	Lead:				
	In bars, sheets, pieces, remnants, and of any other shape in the rough.	do	040	do	.008
	Thin sheets for snuff-boxes, &c	do	200	do	.038
	Pipes for aqueducts, and in sheets and plates	do	070	do	.0013
	Weights for steelyards	do	100	do	.02
	Manufactures, not classified:				
	Simple	do	500	do	.095
	Plated with silver	do	1,000	do	.19
	Gilded	do	1,500	do	2.855
41	Leather and manufactures:				
	Leather:				
	With hair:				
	Of the ermine, otter, beaver, &c	do	2,000	do	.38
	Not classified	do	500	do	.095
	Without hair:				
	In pieces	do	100	do	.02
	In rolls and tanned uppers	do	300	do	.057
	Of wild hogs, chamois, morocco, or false morocco, or sheep-skin.	do	500	do	.095
	Others not classified:				
	White, or of natural color	do	300	do	.057
	Colored, or glossed	do	500	do	.095
	Varnished of any kind	do	1,200	do	.23
	Whips, without handles	Dozen	2,000	Dozen	.84
	Carriage harness:				
	White, colored, or varnished:				
	Smooth, for one animal	Set	18,000	Set	7.56
	Ornamented with common metal	do	28,000	do	11.76
	Mounted with fine leather, gold, or silver.	do	36,000	do	15.12
	Of raw or tanned leather:				
	Smooth, for one animal	do	5,000	do	2.01
	With common metal ornaments	do	7,000	do	2.94
	Saddle-seats	Kilo	800	Pound	.15
	Bags, sacks, indispensables, and instrument-cases:				
	For sewing, simple or with silk	do	1,200	do	.23
	For traveling:				
	Plain	do	800	do	.15
	With ornaments of glass, bone, wood, horn, iron, &c.	do	1,400	do	.265
	With ornaments of mother-of-pearl, ivory, tortoise-shell, plated metals, &c.	do	3,000	do	.57
	Game-bags:				
	Simple	Each	600	Each	.25
	With shot or powder pouches	do	1,000	do	.42
	Caps:				
	Of tiger skins and other ordinary skins	do	400	do	.16
	Of the otter, beaver, and other fine skins	do	1,200	do	.50
	Head-stalls:				
	Of white color or tinted or varnished:				
	Plain	do	750	do	.31
	With common metal ornaments	do	900	do	.38
	Mounted with fine leather, gold, or silver.	do	1,200	do	.50
	Of raw or tanned leather	do	500	do	.21
	For fastening	do	400	do	.17
	Shoe-wear:				
	Boots:				
	High, for riding	Pair	6,000	Pair	2.52
	Not classified	do	4,000	do	1.68
	High shoes and gaiters, of leather or skin of any kind:				
	Up to 22 centimeters in length	do	600	do	.25
	More than 22 centimeters in length	do	1,600	do	.67
	Snoes and buskins, of leather or skin:				
	Up to 22 centimeters in length	do	240	do	.10
	More than 22 centimeters in length	do	700	do	.29

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
41	Leather and manufactures—Continued.				
	Shoe-ware—Continued.				
	Slippers of leather and skins:		<i>Reis.</i>		
	Up to 22 centimeters in length	Gram	150	Gram	\$0.06
	More than 22 centimeters in length	do	240	do	.10
	Wooden-soled slippers or clogs	do	360	do	.15
	Covers for pianos, and the like	Kilo	2,400	Pound	.456
	Hats, of any kind	Each	1,000	Each	.42
	Shot-pouches:				
	Plain, or with one mouth	Dozen	2,400	Dozen	1.00
	Doubled, or like powder-flasks	do	4,000	do	1.68
	Girths	Each	300	Each	.12
	Harness-saddles:				
	Plain	do	4,000	do	1.68
	With ornaments of common metal	do	6,000	do	2.52
	Mounted with fine leather or gold or silver	do	7,200	do	3.02
	Collars:				
	Plain	do	1,200	do	.50
	With common metal ornaments	do	2,000	do	.84
	Mounted with fine leather or gold or silver	do	3,000	do	1.26
	Fans of any kind	do	800	do	.33
	Stirrup-leathers	Doz. pair	4,800	Doz. pair	2.01
	Stocks	Dozen	1,800	Dozen	.75
	Gloves:				
	Kid	Doz. pairs	4,800	Doz. pairs	2.01
	Chamois, beaver, and the like	do	3,000	do	1.26
	Valises:				
	Covered with sheep-skin, sail-cloth, &c.:				
	Up to 60 centimeters in length	Each	1,800	Each	.75
	From 60 to 80 centimeters	do	4,500	do	1.89
	More than 80 centimeters	do	8,000	do	3.36
	Of sole leather, varnished or not:				
	Up to 60 centimeters in length	do	4,000	do	1.68
	From 60 to 80 centimeters	do	8,000	do	3.36
	More than 80 centimeters	do	12,000	do	.....
	Saddle-blankets, sweat-leathers, and padded seats for saddles.	do	1,500	do	.63
	Cap-brims	Kilo	2,000	Pound	.38
	Breast-straps for horses:				
	White or colored	Each	1,000	Each	.42
	Varnished	do	2,000	do	.84
	Leggings	Pair	1,500	Pair	.63
	Tips of billiard-cues	Kilo	1,000	Pound	.19
	Cruppers:				
	White or colored	Dozen	2,400	Dozen	1.00
	Varnished	do	4,000	do	1.68
	Saddles:				
	For men:				
	Covered with hog-skin or chamois	Each	8,000	Each	3.36
	Covered with sheep-skin, or sheep-skin and hog-skin mixed.	do	3,200	do	1.35
	For women:				
	Covered with hog-skin or velvet	do	12,000	do	5.04
	Covered with chamois, morocco or sheep- skin.	do	7,200	do	3.02
	Pieces, cut for manufactures of hats	Kilo	1,000	Pound	.19
	For shoemakers' use:				
	Of colored or white leather	do	1,800	do	.34
	Varnished	do	2,400	do	.456
	For mail-bags, for military and other uses:				
	Of colored or white leather	do	1,800	do	.34
	Varnished	do	2,400	do	.456
42	Lime and cement:				
	Lime, in stone or dust (powder)	do	020	do	.004
	Cement, Roman, Portland, &c.:				
	In the rough or pulverized	do	005	do	.00095
	In small pieces, smooth or colored	do	020	do	.004
43	Malt liquors	do	120	do	.023
44	Medical instruments:				
	Needles:				
	For sewing and without handles	Dozen	200	Dozen	.08
	For Cooper's vaccine, with handles, and the like.	do	1,000	do	.42
	for cataracts, and the like	do	3,000	do	1.26
	Bavaz's, for injections, and the like (small syringes).	Each	800	Each	.33
	Of any kind, with gold or silver head	Dozen	5,000	Dozen	2.10

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
44	Medical instruments—Continued.				
	Probes and catheters:		<i>Reis.</i>		
	Of zinc, pewter, or any other common metal.	Dozen	700	Dozen	\$0.29
	Of rubber	do	300	do	.12
	Of silver	do	3,000	do	1.26
	Apparatus:				
	Of Esmarch, and the like, for compression . . .	Each	700	Each	.29
	Of Potain, Dienlafoy, &c.	do	2,000	do	.84
	For fractures of limbs	do	1,000	do	.42
	Bistouries:				
	With handles of bone, wood, horn, and the like.	Dozen	1,200	Dozen	.50
	With handles of ivory, tortoise-shell, mother-of-pearl, &c.	do	2,400	do	1.00
	Pincers and other instruments for teeth-pulling .	Each	400	Each	.17
	Surgical and dental instrument cases:				
	With instruments for removing flesh, for plugging teeth, with scalpels and other instruments of minor surgery:				
	Up to 6 instruments	do	1,200	do	.50
	Up to 12 instruments	do	2,400	do	1.00
	Up to 24 instruments	do	4,800	do	2.01
	Up to 50 instruments	do	8,000	do	3.36
	More than 50 instruments, 10 per cent. ad valorem.				
	With instruments of important surgery:				
	Up to 6 instruments	Each	2,000	Each	.84
	Up to 12 instruments	do	4,000	do	1.68
	Up to 24 instruments	do	8,000	do	3.36
	Up to 50 instruments	do	15,000	do	6.30
	More than 50 instruments, 10 per cent. ad valorem.				
	With cupping-glasses	Each	1,200	Each	.50
	Empty cases	Kilo	600	Pound	.11
	Empty pouches	do	300	do	.057
	Belts, abdominal and umbilical	Each	400	Each	.16
	Ear-trumpets, of rubber, and the like	do	200	do	.08
	Artificial teeth:				
	Loose, or in plates	Kilo	20,000	Pound	3.80
	Set in wax	do	10,000	do	1.90
	Scalpels, with wooden handles	Dozen	500	Dozen	.21
	Mashers	Each	1,500	Each	.63
	Surgical and dental mirrors	Dozen	2,400	Dozen	1.00
	Skeletons for anatomical studies, corpses, &c. .	Kilo	200	Pound	.038
	Stillets, probes, &c.:				
	Of ordinary metal, steel or iron	Dozen	400	Dozen	.16
	Of silver	do	800	do	.33
	Knives for amputation	do	3,600	do	1.51
	Separate instruments for plugging, cleaning, and cauterizing teeth.	do	1,200	do	.50
	Bleeding-lancets	do	600	do	.25
	Trusses:				
	Covered with any kind of skin, cloth, or rubber:				
	Single	do	1,200	do	.50
	Double	do	2,000	do	.84
	Electro-magnetic:				
	Single	do	8,000	do	3.36
	Double	do	15,000	do	6.30
	Lancets:				
	With handles of wood, bone, &c.	do	500	do	.21
	With handles of ivory, tortoise-shell	do	1,000	do	.42
	Laryngoscopes, pharyngoscopes, opthalmoscopes, and the like.	do	2,000	do	.84
	Files for dentists' use	Kilo	2,400	Pound	4.56
	Lithotomes	Each	1,500	Each	.63
	Vulcanite machines for dentists' use	do	2,000	do	.84
	Nursing-bottles:				
	Complete	Dozen	2,000	Dozen	.84
	Only the bottle	do	600	do	.25
	The nipple complete with capsules and tubes without the bottles.	do	600	do	.25
	The nipples alone	do	240	do	.10
	Figures for studying anatomy	Each	2,000	Each	.84
	Hammers for purposes of autopsy or for dentists' use.	Dozen	3,000	Dozen	1.26
	Masses, for plugging teeth	Kilo	5,000	Pound	.95

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
44	Medical instruments—Continued.				
	Elastic stockings for swellings:		<i>Reis.</i>		
	Woolen or cotton.....	Dozen.....	2,400	Dozen.....	\$1.00
	Silk.....	do.....	4,800	do.....	2.01
	Crutches:				
	Simple.....	Pair.....	1,000	Pair.....	.42
	With spring.....	do.....	2,000	do.....	.84
	Artificial eyes, of glasses or of porcelain.....	Each.....	600	Each.....	.25
	Pincers:				
	Simple.....	Dozen.....	1,000	Dozen.....	.42
	Made like scissors.....	do.....	1,800	do.....	.75
	Twisted, with ends crossed, and the like.....	do.....	3,000	do.....	1.26
	Silver.....	do.....	5,000	do.....	2.10
	Pulverizers, etherizers, and chloroform apparatus.	Each.....	1,200	Each.....	.50
	Scarifiers, of any kind.....	do.....	400	do.....	.16
	Syringes:				
	Rubber.....	Kilo.....	1,000	Pound.....	.19
	Pewter.....	do.....	150	do.....	.03
	Yellow metal.....	do.....	1,200	do.....	.23
	Bone, horn, wood, or glass.....	do.....	600	do.....	.11
	With a spring.....	Each.....	600	Each.....	.25
	Saws.....	do.....	500	do.....	.21
	Specula:				
	Small, for nose, eyes, and ears.....	Each.....	200	Each.....	.08
	Large, for other uses.....	do.....	600	do.....	.25
	Stethoscopes.....	do.....	300	do.....	.12
	Suspensories:				
	Cotton or linen.....	Dozen.....	400	Dozen.....	.16
	Silk.....	do.....	1,500	do.....	.63
	Splints, for fractured limbs.....	do.....	600	do.....	.25
	Surgical scissors and tenacula.....	do.....	2,400	do.....	1.00
	Breast-pumps, of any kind.....	do.....	2,400	do.....	1.00
	Torniquets.....	Each.....	400	Each.....	.16
	Urethrotomes.....	do.....	1,500	do.....	.63
	Cupping-glasses of any kind.....	Dozen.....	600	Dozen.....	.25
	Not specified, and separate pieces:				
	Steel or iron, polished or unpolished.....	Kilo.....	4,000	Pound.....	.76
	Silver.....	Gram.....	005	Gram.....	.002
	Glass or porcelain.....	Kilo.....	1,600	Pound.....	.30
	Rubber, wood, buffalo, or ordinary horn, and the like.....	do.....	1,000	do.....	.19
	Machines or apparatus, 10 per cent. ad valorem.				
45	Naval stores:				
	Rosin.....	Kilo.....	005	Pound.....	.00095
	Tar and pitch.....	do.....	010	do.....	.002
	Turpentine, of any kind.....	do.....	050	do.....	.00965
46	Oil-cake and meal.....	do.....	500	do.....	.095
47	Oils, animal, mineral, and vegetable:				
	Fixed liquid or concrete:				
	Of sweet or bitter almonds and of sesame.....	do.....	320	do.....	.06
	Of croton tiglium.....	do.....	3,000	do.....	.57
	Of cod-liver or ray.....	do.....	400	do.....	.08
	Ethereal.....	do.....	5,000	do.....	.95
	Of cotton-seed:				
	Impure or colored.....	do.....	040	do.....	.008
	Purified or uncolored, boiled.....	{ do.....	180	do.....	.034
		{ do.....	080	do.....	.015
	Nutmeg or nutmeg butter.....	do.....	2,000	do.....	.38
	Castor-oil or palma Christi oil:				
	Cooked.....	do.....	100	do.....	.02
	Expressed.....	do.....	320	do.....	.06
	Not specified (medicinal).....	do.....	600	do.....	.11
	Empyreumatic or pyroligneous:				
	Of juniper.....	do.....	300	do.....	.057
	Of naphtha.....	do.....	060	do.....	.011
	Petroleum:				
	Prepared for illumination (kerosene and gasoline).....	do.....	060	do.....	.011
	Dark or black and residua of the distillation of petroleum.....	do.....	050	do.....	.0095
	Not specified.....	do.....	060	do.....	.011
	Volatile or essential:				
	Rosemary.....	do.....	1,000	do.....	.19
	Lavender.....	do.....	1,500	do.....	.285
	Orange blossoms.....	do.....	10,000	do.....	1.90
	Mustard.....	do.....	10,000	do.....	1.90

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
47	Oils, vegetable—Continued.				
	Volatile or essential—Continued.				
	Rose	Kilo	Reis. 20,000	Pound	\$3.80
	Not specified	do	4,000	do	.76
48	Paraffine and wax:				
	Paraffine, simple or compound:				
	In mass	do	250	do	.047
	In candles	do	400	do	.08
	Wax:				
	Vegetable of any kind	do	200	do	.038
	For melting, impure, native or in the rough	do	200	do	.038
	Prepared in bowls or sticks, purified or clean, in clots, white or yellow.	do	500	do	.095
	In candles, plain or polished	do	700	do	.13
	Manufactures, not classified	do	1,200	do	.23
49	Paints:				
	Prepared with oil, and the like:				
	For house painting	do	060	do	.011
	Fine, in tubes or cylinders, and the like	do	1,200	do	.23
	Coloring materials, not specified	do	1,600	do	.30
50	Paper and manufactures:				
	Encarmined	do	2,000	do	.38
	Shagreened, of any quality	do	060	do	.011
	For writing or drawing:				
	Plain	do	140	do	.026
	Gilt, colored, stamped with monogram, &c.	do	300	do	.057
	For printing purposes	do	020	do	.004
	For binding purposes	do	150	do	.028
	Gilded, silvered, or their imitation	do	500	do	.095
	Prepared for photographic use	do	800	do	.15
	For blotting	do	100	do	.02
	Wrapping paper without printed matter	do	050	do	.0095
	Wrapping paper with printed matter	do	150	do	.03
	White or colored paper, satin finished or not, for manufactures of prints.	do	050	do	.0095
	Lined with cloth	do	120	do	.023
	Silk, white or colored, for copying letters	do	200	do	.038
	Oiled, carbonized, oriental, of Chinese rice, &c.	do	200	do	.038
	For cigarettes and the like:				
	In sheets	do	150	do	.0095
	In little books	do	400	do	.08
	Wall-paper:				
	Painted or stamped	do	800	do	.15
	Painted, or stamped with gilding or silver- platings, or velvet-finished.	do	1,200	do	.23
	In pasteboard cap-brims, lined with linen or cotton.	do	300	do	.057
	In shirt collars	Dozen	240	Dozen	.10
	In shirt cuffs	Doz. pair	500	Doz. pair	.21
	Shirt fronts	Dozen	360	Dozen	.15
	In hat linings, silk-woven	Kilo	250	Pound	.047
	In bags or coverings without lettering	do	100	do	.02
	In bags or coverings with lettering	do	300	do	.057
	Envelopes	do	300	do	.057
	In strips or galloons:				
	For telegraphy	do	100	do	.02
	Of any other kind	do	1,200	do	.23
	In lanterns	do	600	do	.11
	Prepared for confectioneries and the like	do	1,200	do	.23
52	Provisions:				
	Meats, fresh and salt:				
	Beef and mutton:				
	Green or preserved by refrigeration or other process.	do	020	do	.004
	Dry	do	020	do	.004
	Of any kind, salted or smoked	do	040	do	.008
	Hams, prepared in any way	do	250	do	.047
	Canned, of any preparation not medical.	do	300	do	.057
	Sausages	do	500	do	.095
	Extracts	do	1,200	do	.23
	Lard	do	120	do	.023
	Butter	do	350	do	.066
	Cheese	do	300	do	.057
53	Quicksilver	do	300	do	.057
54	Seeds:				
	Flax	do	060	do	.011
	Melon:				
	With hull	do	120	do	.023
	Without hull	do	600	do	.11

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money,
54	Seeds—Continued.		<i>Reis.</i>		
	Mustard	Kilo	100	Pound	\$0. 02
	For gardening or agriculture		Free		
	Not specified	do	300	do	.057
55	Soap:				
	Without perfume:				
	Dark or black	do	030	do	.0057
	Yellow	do	070	do	.013
	White	do	150	do	.0285
	Perfumed	do	600	do	.11
	Medicinal of any kind	do	600	do	.11
56	Spirits:				
	Absinthe, eucalypsinthe, and kirsch	Liter	900	Liter	.37
	Alcohol, brandy, cognac, rum, whisky, aguardiente of cane, of Jamaica, of France, of the Rhine, and of any other kind	do	600	do	.25
	Gin	do	220	do	.09
	NOTE.—The rates given above include only liquors imported in casks. When they come in demijohns they pay 25 per cent., and in jars, flasks, bottles, or any other vessel of earthenware, chinaware, or glass, 50 per cent. more than the duties above set forth, there being included in this the duties on the respective vessels. Duties on alcoholic liquids are collected according to the real force of the pure alcohol, ascertained by the alcoholmeter and instructions of Gay Lussac. The above taxes refer, therefore, to 10° at a temperature of 15° C.				
57	Starch:				
	Of potatoes	Kilo	3,000	Pound	.57
	Not classified	do	700	do	.13
58	Sugar:				
	Milk	do	600	do	.11
	Of grape	do	060	do	.011
	Any other kind	do	130	do	.024
59	Tin:				
	In sheets	do	050	do	.0095
	Manufactures, not classified:				
	Simple or plain	do	300	do	.057
	Painted or varnished, with or without ornaments of copper, brass, zinc, or other common metal	do	600	do	.11
60	Tobacco, leaf, cigars, cigarettes:				
	In cigars	Hundred	3,000	Hundred	1.26
	In cigarettes	Kilo	2,000	Pound	.38
	In sheets of any kind	do	300	do	.057
	For chewing	do	600	do	.11
	Prepared for pipes or cigarettes	do	800	do	.15
	As snuff	do	1,800	do	.34
	Prepared in any other manner	do	3,000	do	.68
	NOTE.—On tobacco there is a special duty of 40 per cent. in addition to those given above, and to the regular additional tax of 60 per cent.				
61	Vegetables:				
	Dry or fresh, salted or in brine	do	040	do	.008
	Canned in any way, with or without mixture of any fruit	do	200	do	.038
62	Wood and manufactures:				
	Bark or trunk of the cork-tree	Kilo	010	Pounds	.002
	Stocks:				
	Of oak:				
	Up to 10 centimeters thick:				
	Up to 10 meters in length	Meter	400	Meter	.16
	More than 10 meters in length	do	600	do	.25
	More than 10 to 20 centimeters thick:				
	Up to 10 meters in length	do	800	do	.33
	More than 10 meters in length	do	1,000	do	.42
	More than 20 and up to 40 centimeters thick:				
	Up to 10 meters in length	do	1,400	do	.58
	More than 10 meters in length	do	2,400	do	1.00
	More than 40 and up to 60 centimeters thick:				
	Up to 10 meters in length	do	3,600	do	1.51
	More than 10 meters in length	do	4,800	do	2.01
	More than 60 centimeters thick:				
	Up to 10 meters in length	do	7,200	do	3.02
	More than 10 meters in length	do	8,400	do	3.52

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
82	Wood and manufactures—Continued.				
	Stocks—Continued,				
	Of pine or any other wood not classified:				
	Up to 10 centimeters thick:		<i>Reis.</i>		
	Up to 10 meters long.....	Meter	200	Meter	\$0.08
	More than 10 meters in length.....	do	300	do	.12
	More than 10 centimeters and up to 20 thick:				
	Up to 10 meters in length	do	400	do	.16
	More than 10 meters in length	do	500	do	.21
	More than 20 centimeters and up to 40 centimeters thick:				
	Up to 10 meters in length	do	700	do	.29
	More than 10 meters in length.....	do	1,200	do	.50
	More than 40 and up to 60 centimeters thick:				
	Up to 10 meters in length	do	1,800	do	.75
	More than 10 meters in length.....	do	2,400	do	1.00
	More than 60 centimeters thick:				
	Up to 10 meters in length	do	3,600	do	1.51
	More than 10 meters in length.....	do	4,000	do	1.68
	Planks or logs:				
	Of mahogany, satinwood, and other mate- rials suitable for joining:				
	In planks or logs.....	Kilo	060	Pounds...	.011
	In thin sheets.....	do	200	do	.038
	Of oak and teak (<i>teca</i>):	Cu. meter.	1,600	Cu. meter.	.67
	Of pine or any other material not class- ified.	do	1,600	do	.67
	Staves.....	Kilo	020	Pounds...	.004
	Needles for tricot and the like.....	do	1,200	do	.23
	Needle-cases	do	1,200	do	.23
	Shelves and mantels:				
	Of ordinary wood:				
	To 1.50 meters in length	Each	7,000	Each	2.94
	More than 1.50 meters in length.....	do	12,000	do	5.04
	Of fine wood:				
	To 1.50 meters in length	do	14,000	do	5.88
	More than 1.50 meters in length.....	do	24,000	do	10.08
	Arches or hoops:				
	For masts	Dozen	540	Dozen	.22
	For tunnels, pipes, or barrels.....	Hundred..	600	Hundred..	.25
	Saddle-trees.....	Each	600	Each	.25
	Bagatelle tables:				
	Of ordinary wood.....	do	11,000	do	4.62
	Of fine wood.....	do	25,000	do	10.50
	Trunks, boxes:				
	Of planed pine:				
	Not set up.....	Kilo	020	Pounds...	.004
	Set up:				
	To 80 centimeters long.....	Each	500	Each	.21
	More than 80 centimeters long.....	do	1,000	do	.42
	Of common wood, painted or lined with oil- cloth:				
	Up to 60 centimeters long.....	do	1,500	do	.63
	From 60 to 80 centimeters long.....	do	3,000	do	1.26
	More than 80 centimeters long.....	do	6,000	do	2.52
	Covered with leather or zinc:				
	Up to 60 centimeters long.....	do	3,000	do	1.26
	More than 60 and up to 80 centimeters long.	do	5,000	do	2.10
	More than 80 centimeters long.....	do	9,000	do	3.78
	Of camphor, sandal, or any fine wood:				
	Up to 60 centimeters long	do	3,000	do	1.26
	More than 60 and up to 80 centimeters long.	do	6,000	do	2.52
	More than 80 centimeters long	do	9,000	do	3.78
	NOTE.—Trunks with coverings, of cloth, skin, cotton, woolen or linen goods pay 20 per cent. more of respective duties.				
	Buckets and tubs, with or without copper or iron hoops.	Kilo	120	Pounds...	.023
	Benches, stools, and low chairs:				
	Small, of any kind, for the feet.....	Each	300	Each	.12
	Shutting or opening, with seat of any kind..	do	500	do	.21

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
62	Wood and manufactures—Continued. Benches, stools, and low chairs—Continued. With seat of straw or cane for pianos and the like:		<i>Reis.</i>		
	Of common wood.....	Each	1,800	Each	\$0.75
	Of fine wood.....	do	3,600	do	1.51
	Rustic.....	do	1,000	do	.42
	Waiters and dippers:				
	Simple, painted, or varnished	Kilo	1,000	Pounds	.19
	Japanned, with or without ornaments of mother-of-pearl.	do	3,600	.....	.....
	Barrels and kegs:				
	Entire, empty or set up	Each	500	Each	.21
	Not set up.....	Kilo.....	020	Pounds	.004
	Water-tanks for ships:				
	Of common wood.....	do	500	do	.095
	Of fine wood	do	1,000	do	.19
	Bungs for pipes and barrels	do	120	do	.023
	Walking-sticks:				
	With head of bone, horn, wood, or com- mon metal.	Dozen	2,400	Dozen	1.00
	With handle of ivory, tortoise-shell, or mother-of-pearl.	do	7,200	do	3.02
	With handle of gold or silver, or orna- ments of same or of precious stones, 30 per cent. ad valorem.				
	Cradles:				
	Of ordinary wood	Each	4,000	Each	1.68
	Of fine wood	do	10,000	do	4.20
	Billiard-tables:				
	Of ordinary wood	do	60,000	do	25.20
	Of fine wood	do	100,000	do	42.00
	Screens:				
	Covered with paper or cloth.....	do	10,000	do	4.20
	Entirely of wood.....	do	30,000	do	12.60
	Boxes:				
	Of box-wood, for snuff and the like	Kilo	800	Pounds	.15
	Of beech or pine:				
	Small, for wafers, druggists' use, and the like.	do	800	do	.15
	Large, in sets or separate	do	500	do	.095
	Balls:				
	Small, for billiards, etc	do	1,000	do	.19
	Large, for nine-pins	do	200	do	.038
	Buttons	do	400	do	.08
	Racks:				
	Large, for clothes and the like:				
	Of common wood	Each	2,400	Each	1.00
	Of fine wood	do	5,000	do	2.10
	Small, for towels and the like:				
	Of ordinary wood	Kilo	400	Pounds	.08
	Of fine wood	do	1,000	do	.19
	Handles:				
	For sticks, umbrellas, and small instru- ments and tools.	do	300	do	.057
	For pens and crochet	do	600	do	.11
	For other uses, 30 per cent. ad valorem.				
	Chairs:				
	Of ordinary wood:				
	With wooden seat:				
	With arms	Each	600	Each	.25
	Without arms	do	300	do	.12
	With seats of straw or cane:				
	With arms	do	2,400	do	1.00
	Without arms	do	1,200	do	.50
	Rocking or opening and shutting:				
	With arms	do	3,000	do	1.26
	Without arms	do	2,000	do	.84
	For children.....	do	900	do	.37
	Of fine wood:				
	With straw or cane seat:				
	With arms	do	5,000	do	2.10
	Without arms	do	2,600	do	1.09
	Rocking or opening and shutting:				
	With arms	do	8,000	do	3.36
	Without arms	do	4,000	do	1.68
	For children.....	do	1,800	do	.75

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
62	Wood and manufactures—Continued.				
	Chairs—Continued.		<i>Reis.</i>		
	Rustic, of pine and the like, for gardens, opening and shutting.	Each	2 00	Each	\$0. 08
	Rustic, of limbs of trees, with or without bark.	do	360	do	. 15
	Not specified:				
	Of common wood, 30 per cent. ad valorem.				
	Of fine wood, 20 per cent. ad valorem.				
	Beds:				
	Of common wood:				
	For one person	do	8, 000	do	3. 36
	For two persons	do	12, 000	do	5. 04
	For a child	do	4, 000	do	1. 68
	Of fine wood:				
	For one person	do	20, 000	do	8. 40
	For two persons	do	30, 000	do	12. 60
	For a child	do	10, 000	do	4. 20
	Hats of fine splits:				
	Ornamental	do	500	do	. 21
	Unornamental	do	300	do	. 12
	Spoons, knives, forks, and the like, for salad, mustard, &c.:				
	Of common wood	Kilo	1, 500	Pounds	. 285
	Of fine wood	do	5, 000	do	. 95
	Bureaus:				
	Of common wood:				
	With 3 large drawers	Each	5, 000	Each	2. 10
	With more than 3 drawers	do	8, 000	do	3. 36
	With secretary	do	12, 000	do	5. 04
	Of fine wood:				
	With 3 large drawers	do	12, 000	do	5. 04
	With more than 3 drawers	do	20, 000	do	8. 40
	With secretary	do	30, 000	do	12. 60
	Consoles:				
	Of common wood:				
	Up to 80 centimeters long	do	3, 500	do	1. 47
	More than 80 and up to 150	do	9, 000	do	3. 78
	More than 150	do	14, 000	do	5. 88
	Of fine wood:				
	Up to 80 centimeters long	do	10, 000	do	4. 20
	More than 80 and up to 150	do	14, 000	do	5. 88
	More than 150	do	25, 000	do	10. 50
	Bed-heads:				
	Of common wood	do	3, 000	do	1. 26
	Of fine wood	do	5, 000	do	2. 10
	Boot-jacks	do	500	do	. 21
	Lasts	Kilo	400	do	. 08
	Cruet-stands:				
	Of common wood	do	1, 200	do	. 23
	Of fine wood	do	3, 000	do	. 57
	Trays, bowls, bath-tubs, &c.	do	120	Pounds	. 023
	Cupboards and wardrobes:				
	Of common wood	Each	18, 000	Each	7. 56
	Of fine wood	do	30, 000	do	12. 60
	Washstands:				
	Of common wood:				
	Round	do	1, 800	do	. 75
	With table, with or without drawers:				
	Up to 80 centimeters long	do	2, 400	do	1. 00
	More than 80 centimeters long	do	5, 500	do	2. 31
	With divisions	do	9, 200	do	3. 86
	Of fine wood:				
	Round	do	4, 000	do	1. 68
	With table, with or without drawers:				
	Up to 80 centimeters long	do	6, 000	do	2. 52
	More than 80 centimeters long	do	12, 000	do	5. 04
	With divisions	do	20, 000	do	8. 40
	Fans				
	Common wood, simple or varnished, gilded, or silvered, or opened.	do	500	do	. 21
	Sandal-wood, japanned, or the like	do	1, 500	do	. 63
	Measures of any kind, not classified	Kilo	180	do	. 034
	Tables:				
	Ordinary wood:				
	For center tables	Each	5, 000	do	2. 10
	For tea, sewing, writing, playing, dumb-waiters, and the like.	do	4, 000	do	1. 68

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazilian currency.	Unit.	Equivalent in United States money.
62	Wood and manufactures—Continued.				
	Tables—Continued.				
	Ordinary wood—Continued.				
	Dining-tables:		Reis.		
	Up to 6 meters long	Each	10,000	Each	\$4.20
	More than 6 meters long	do	20,000	do	8.40
	Fine wood:				
	As center-tables	do	20,000	do	8.40
	For tea, sewing, writing, playing, dumb-waiters, and the like.	do	8,000	do	3.36
	Dining tables:				
	Up to 6 meters long	do	18,000	do	7.56
	More than 6 meters long	do	36,000	do	15.12
	Rustic, with bark and the like	do	1,500	do	.63
	Mouldings, set up or not, including cords, &c.:				
	Simple or with plaster of paris apparatus	Kilo	300	Pounds	.057
	Painted, varnished, or gilt in part	do	500	do	.095
	Entirely gilt	do	600	do	.11
	Tooth-picks	do	300	do	.057
	Pedestals and brackets, music racks, &c.:				
	Simple, painted, or varnished	Each	500	Each	.21
	Gilt or imitations thereof	Kilo	800	Pounds	.15
	Combs of any kind	do	1,400	do	.266
	Hogsheads and other large barrels:				
	Whole, empty or set up	Each	1,200	Each	.50
	Not set up	Kilo	200	Pounds	.038
	Bracelets of sandal-wood and the like, inlaid or not.	do	600	do	.11
	Rulers	do	1,500	do	.285
	Oars	Meter	100	Meter	.04
	Seats for water-closets:				
	Common wood:				
	Simple or with back	Each	2,500	Each	1.05
	With pump	do	4,000	do	1.68
	Fine wood:				
	Simple or with back	do	5,000	do	2.10
	With pump	do	8,000	do	3.36
	Secretaries:				
	Common wood:				
	Small, for ladies, simple or with shelves	do	10,000	do	4.20
	Large, for men, simple or with shelves	do	14,000	do	5.88
	Same, <i>bureau ministre</i>	do	20,000	do	8.40
	Fine wood:				
	Small, for ladies, simple or with shelves	do	15,090	do	6.30
	Large, for men, idem, idem	do	30,000	do	12.60
	Same, <i>bureau ministre</i>	do	50,000	do	21.00
	Sofas:				
	Common wood:				
	Small, with or without backs and the like.	do	7,000	do	2.94
	Large, with or without backs	do	11,000	do	4.62
	Fine wood:				
	Small, with or without backs and the like.	do	12,000	do	5.04
	Large, with or without backs	do	20,000	do	8.40
	Bed sofas or sofa beds, of common wood	do	6,000	do	2.52
	Rustic	do	1,500	do	.63
	Cues for billiards or bagatelle	do	300	do	.12
	Lathes	Kilo	200	Pounds	.038
	Toilet stands:				
	Common wood:				
	To be placed on a table	Each	2,000	Each	.84
	In the shape of a table or with a table	do	10,000	do	4.20
	With chest of drawers, &c.	do	16,000	do	6.72
	Fine wood:				
	To be placed on a table	do	4,000	do	1.68
	As a table, with a table, or with or without drawers.	do	18,000	do	7.56
	With chest of drawers and the like	do	28,000	do	11.76
	Shades for windows	do	1,000	do	.42
	Blinds	do	4,000	do	1.68
	Manufactures not classified:				
	Engraved in half relief, for furniture	Kilo	3,000	Pounds	.57
	Furniture:				
	Common wood, 30 per cent. ad valorem.				
	Fine wood, 40 per cent. ad valorem.				
	Pieces for the construction of houses, 10 per cent. ad valorem.				
	All others, 30 per cent. ad valorem.				

Customs duties collected on various articles at the port of Rio de Janeiro—Continued.

Number.	Tariff classification.	Unit.	Duty in Brazil- ian cur- rency.	Unit.	Equiva- lent in United States money.
63	Wool :		<i>Reis.</i>		
	In the rough, carded, tinted, or prepared in any manner.	Kilo	060	Pounds ...	\$0.011
	In thread :				
	Simple for weaving	do	150	do	.0285
	For silk throwing	do	900	do	.17
	Loose for embroidery	do	1,000	do	.19
64	Zinc :				
	In bars or tongues, in pieces or fragments, or in any other shape, in bulk.	do	040	do	.008
	In sheets, simple, prepared or stamped, for covering houses, &c., in rolls.	do	070	do	.013
	As nails, tacks, &c	do	150	do	.0285
	In manufactures not classified :				
	Simple	do	500	do	.095
	Silver-plated or bronzed, entirely or in part.	do	1,000	do	.19
	Gilt, entirely or in part	do	1,500	do	.285

BRITISH GUIANA.

The full tariff of British Guiana was printed in Consular Reports No. 62½, p. 563.

H. Ex. 20—69

CHILI.

Statement of the customs duties collected under the tariff laws of Chili on the following-named articles.

[Prepared by Consul Dunn.]

Number.	Tariff classification.	Fixed appraisement.		Per cent.
		Units.	Duty.	
1	Agricultural implements:			
	Machinery, gross	Kilo	\$0 20	15
	Plows, gross	do	13	15
	Spades and shovels, gross	do	40	15
	Forks:			
	3 teeth	Dozen	7 00	15
	4 teeth	do	8 00	15
	5 teeth	do	12 00	15
	6 teeth	do	15 00	15
2	Animals, live			Free.
3	Art works:			
	Pictures, on valuation			35
	Statues, on valuation			35
4	Bark and extracts, medicinal, gross	Kilo	30	25
5	Blacking:			
	In tins, gross	do	18	25
	In bottles, gross	do	10	25
6	Bones, hoofs and horns (exports)			
7	Books, maps and engravings:			
	Printed books			Free.
	Printed books, with engravings			35
	Account books:			
	Common	Kilo	50	35
	Medium	do	1 00	35
	Fine	do	1 50	35
	Maps and engravings, on valuation			35
8	Brass and manufactures of:			
	Sheet	Kilo	1 25	25
	Builders' fittings	do	1 15	25
	Builders' fittings	do	1 75	25
	Carriage furniture	do	1 25	25
	Candlesticks, common	do	1 20	25
	Screws	do	1 10	25
9	Breadstuffs:			
	Barley			Free.
	Biscuits:			
	Ship	Quintal	6 50	35
	Cabin:			
	Upwards of 8 centimeters in diameter	do	8 70	35
	Under 8 centimeters in diameter	Kilo	35	35
	Sweet	do	60	35
	Indian corn, oats, rye, wheat and flour			Free.
10	Bricks:			
	Fire	Hundred	3 00	15
	For building purposes	do	1 25	25
11	Brooms and brushes:			
	Brooms, common:			
	With or without handles	Dozen	2 50	35
	For ships	do	75	35
	Shoe brushes:			
	Without handles	do	60	25
	With handles, common	do	1 00	25
	With handles, fine	do	1 50	25
	Clothes brushes:			
	Common	do	3 00	25
	Medium	do	4 50	25
	Fine, on valuation			25
	Tooth brushes, gross	Gross	10 00	25
	Nail brushes, gross	do	24 00	25
12	Candles:			
	Tallow	Kilo	30	25
	Stearine	do	50	35
	Sperm	do	1 00	35

Statement of the customs duties collected under the tariff laws of Chili, &c.—Continued.

Number.	Tariff classification.	Fixed appraisement.		Per cent.
		Units.	Duty.	
13	Carriages and horse-cars, on valuation			35
14	Cars (railroad, steam) on valuation			35
15	Chemicals:			
	Carbolic acid:			
	Crystallized, gross	Kilo	\$0 80	25
	Disinfectant liquid or in powder, gross	do	25	25
	Muriatic acid in carboys, gross	do	07	25
	Nitric acid in carboys, gross	do	12	25
	Sulphuric acid in carboys, gross	do	06	25
	Caustic soda	do	11	25
16	Clocks and watches:			
	Gent's English gold:			
	Thin cover	Each	70 00	15
	Medium cover	do	90 00	15
	Thick cover	do	120 00	15
	Gent's American, French, or Swiss:			
	Gold, thin cover	do	25 00	15
	Medium cover	do	50 00	15
	Thick cover	do	85 00	15
	Ladies' English gold:			
	Thin cover, without brilliants	do	40 00	15
	Medium cover, without brilliants	do	50 00	15
	Thick cover, without brilliants	do	75 00	15
	Ladies' American, French, or Swiss gold:			
	Thin cover, without brilliants	do	20 00	15
	Medium cover, without brilliants	do	30 00	15
	Thick cover, without brilliants	do	45 00	15
	Gold chronometers, half cover, and repeaters	do	130 00	15
	Gold superfine jeweled covers, on valuation			15
	English silver:			
	Common	Each	10 00	15
	Medium	do	14 00	15
	Fine	do	20 00	15
	American, French, or Swiss silver:			
	Common	do	5 00	15
	Medium	do	8 00	15
	Fine	do	12 00	15
	Nickel	do	2 00	15
	Nickel, gilt or plated covers	do	3 00	15
	Clocks, on valuation			35
17	Coal			Free.
18	Copper:			
	Ore, bar, and ingot			Do.
	Sheathing			Do.
	Sheet	Kilo	60	25
19	Cotton:			
	Sheetings, shirtings, prints, drills, denims, classification			25
	Osnaburgs, classification			15
20	Earthenware, stone and china ware:			
	Earthenware:			
	Common, gross	Kilo	12	25
	Fine, gross	do	25	25
	Stone bottles, gross	do	03	15
	Chinaware:			
	Common, gross	do	12	35
	Fine, gross	do	\$0 18 to 40	35
	Superfine, on valuation			35
21	Fertilizers, not in tariff, not used			
22	Fish:			
	Large fish, dried, smoked, or salted, gross	Kilo	12	35
	Salmon:			
	Dried, smoked, or salted, gross	do	17	35
	Tinned, gross	do	25	35
	Small fish:			
	Dried, smoked, or salted, net	do	17	35
	Tinned, net	do	22	35
23	Flax, hemp, and jute:			
	Britannias	do	4 00	35
	Canvas	do	60 to 70	15 and 25
	Drills	do	90 to 1 35	25
	Sheeting	do	4 00	35
	Ticking	do	80 to 1 20	25
	Bagging	do	35	15
	Cordage, upwards of 21 millimeters in circumference	do	20	25
24	Fruits, preserves, gross	do	30	35
25	Furs, on valuation			35
26	Glass:			
	Bottles, common, gross	Kilo	04	15
	Demijohns, up to 19 liters capacity	Each	30	25

Statement of the customs duties collected under the tariff laws of Chili, &c.—Continued.

Number.	Tariff classification.	Fixed appraisement.		Per cent.
		Units.	Duty.	
26	Glass—Continued.			
	Globes for lamps.....	Kilo.....	\$0 20 and 25	25
	Phials.....	do.....	14c. to 1 00	25
	Tumblers and wine glasses:			
	Common.....	do.....	10 to 20	25
	Medium.....	do.....	25 to 70	25 and 35
	Fine, on valuation.....			35
	Window-glass:			
	Common, not colored, up to 4 millimeters in thick- ness, gross.....	Kilo.....	06	25
	Beyond that thickness, on valuation.....			25
27	Glucose, solid or liquid, gross.....	Kilo.....	12	25
28	Glue, gross.....	do.....	25	25
29	Powder:			
	Mining.....	do.....	20	15
	Sporting:			
	In flasks.....	do.....	80	35
	In kegs.....	do.....	50	35
30	Hair:			
	Human:			
	Not exceeding 50 centimeters in length.....	do.....	12 00	35
	Exceeding 50 centimeters in length.....	do.....	20 00	35
	Long or short, prepared, on valuation.....			35
	Animal.....			Free.
31	Hay.....			Free.
32	Hides and skins:			
	Ox and cow hides, dry or salted.....			Free.
	Goat-skins.....	Dozen.....	4 03	25
	Seal:			
	One hair.....	do.....	7 00	25
	Two hairs.....	do.....	12 00	25
	Otter.....	Each.....	10 00	35
	Wash-leather.....	Kilo.....	3 00	25
	Sheep-skins.....	Dozen.....	3 00	25
	Hog-skins.....	Kilo.....	2 00	25
	Sole.....	Each.....	4 00	25
	Patent leather.....	Kilo.....	3 00	25
	Morocco.....	do.....	2 50 and 5 00	25
33	Honey.....	do.....	08	25
34	Hops:			
	In metal or wood, gross.....	do.....	50	25
	In sacking, gross.....	do.....	65	25
35	Ice. (Municipal monopoly.).....			
36	India-rubber manufactures, tubing, packing, sheet, gross.....	do.....	1 0	25
37	Iron and steel:			
	Manufactures:			
	Pig and bar iron.....			Free.
	Sheet:			
	Painted.....	Kilo.....	09	25
	Not painted nor galvanized.....	do.....	09	15
	Galvanized.....	do.....	12	25
	Wrought, or cast:			
	Painted or tinned.....	do.....	30	25
	Enameled.....	do.....	60	25
38	Jewelry:			
	False, on valuation.....			35
	Gold and silver, on valuation.....			15
	Precious stones, on valuation.....			04
39	Lamps, on valuation.....			35
40	Lead:			
	Pig and sheet.....			Free.
	Black lead.....	Kilo.....	16	25
	Leaf.....	do.....	1 25	25
41	Leather:			
	Manufactures:			
	Men's boots and shoes:			
	Common.....	Dozen.....	48 00	35
	Patent leather.....	do.....	72 00	35
	Sailors' boots.....	do.....	30 00	35
	Women's boots and shoes.....	do.....	16 to 52 00	35
	Children's boots and shoes.....	do.....	10 to 36 00	35
42	Lime and cement, Roman, gross.....	Kilo.....	02	15
43	Malt liquors:			
	Bottled, specific duty.....	Dozen.....		1.25
	In bulk, specific duty.....	Liter.....		0.12
44	Medical instruments.....			Free.
44a	Musical instruments:			
	Wind and string.....			35
	Musical boxes.....			35

Statement of the customs duties collected under the tariff laws of Chili, &c.—Continued.

Number.	Tariff classification.	Fixed appraisement.		Per cent.
		Units.	Duty.	
44a	Musical instruments—Continued.			
	Harmoniums		\$35 to \$225 00	.....
	Pianos:			
	Grand:			
	Up to 190 centimeters in length	Each	350 00	35
	Above 190 centimeters in length	do	600 00	35
	Cottage:			
	Up to 155 centimeters in height	do	225 00	35
	Above 155 centimeters in height	do	400 00	35
	Other shapes, on valuation			35
45	Naval stores:			
	Rosin			Free.
	Tar			Free.
	Turpentine	Liter	20	25
	Pitch			Free.
46	Oil cake and meal, linseed for medicinal purposes	Kilo	10	25
47	Oils:			
	Whale:			
	Raw	do	13	25
	Refined	do	22	25
	Sperm:			
	Raw	do	24	25
	Refined	do	42	25
	Cocoa and palm	do	18	25
	Linseed, rape, and pine	do	20	25
	Lard and neatsfoot	do	20	25
	Olive	do	25	25
	Naphtha, paraffine, petroleum, and kerosene	do	08	25
48	Paraffine and wax:			
	Paraffine	do	08	25
	Wax, vegetable or mineral, gross	do	30	25
49	Paints:			
	White and red lead	do	15	25
	Ochre	do	04	25
	Common, prepared in oil, in tins, gross	do	13	25
50	Paper:			
	Wrapping, gross	do	14	35
	Marbled, gross	do	50	35
	Music, gross	do	40	25
	Blotting, gross	do	40	25
	News			Free.
	Foolscap, gross	do	40	25
	Letter, gross	do	50	25
	Telegraph strips			Free.
	Hangings	Roll	12c. to 2 50	25 and 35
51	Plated ware:			
	Tea and coffee services, 4 pieces		12 to 20 00	35
	Tea and coffee services, fine, on valuation			35
	Plated spoons	Dozen	1 to 5 00	35
	Plated forks	do	8 to 5 00	
	Cruets	Each	1.50 to 8 00	
52	Provisions:			
	Meat:			
	Fresh	Kilo		Free.
	Salted, beef or pork, gross	do	12	25
	Oleomargarine, not in tariff.			
	Lard:			
	In tins, gross	do	30	25
	In kegs, gross	do	22	25
	Butter, not in tariff.			
	Cheese, gross	do	40	35
53	Quicksilver			Free.
54	Seeds (not medicinal)			Free.
55	Soap, washing, gross	Kilo	12	25
56	Spirits:			
	Bottled, specific duty	Dozen		4.00
	In bulk, specific duty	Liter		0.42
57	Starch, gross	Kilo	12	25
58	Sugar:			
	First classification.—Refined, whole, broken, or crushed, moist or dry.	Quintal	23 00	35
	Second classification.—White, like "Rosa Emelia," ground or coarse, moist or dry, 80.434 per cent.	do	18 50	35
	Third classification.—Granulated, first product, moist or dry, 60.869 per cent.	do	14 00	35
	Fourth classification.—Granulated, second product, moist or dry, 45.652 per cent.	do	10 50	35
	Fifth classification.—No. 20, 19, 18, 17, Dutch chamber, moist or dry, 70.434 per cent.	do	16 20	35

Statement of the customs duties collected under the tariff laws of Chili, &c.—Continued.

Number.	Tariff classification.	Fixed appraisement.		Per cent.
		Units.	Duty.	
58	Sugar—Continued.			
	Sixth classification.—No. 16, 15, 14, 13, Dutch chamber, moist or dry, 58.695 per cent.	Quintal...	\$13 50	35
	Seventh classification.—No. 12, 11, 10, 9, Dutch chamber, moist or dry, 45.652 per cent.	...do	10 50	35
	Eighth classification.—No. 8 and following, same chamber, moist or dry, 37.826 per cent.	...do	8 70	35
	Molasses	Litre.....	08	25
59	Tin:			
	Block or sheet			Free.
	Leaf	Kilo	1 25	25
60	Tobacco:			
	Havana, leaf, or cut in any shape, specific duty	do		1. 50
	Any other kind, specific duty	do		1. 00
	Cigars, specific duty	do		3. 00
	Cigarettes:			
	Havana tobacco, specific duty	do		1. 50
	Any other tobacco, specific duty	do		1. 00
61	Vegetables:			
	Dried, gross	Kilo	30	25
	In water, vinegar, or sauce:			
	Bottled, gross	do	20	25
	In barrels, gross	do	10	25
62	Wood:			
	Furniture, on valuation			35
	Buckets:			
	2 and 3 hoops	Dozen	3 00	25
	Oak, for ships' use	do	5 00	25
	Pails, in sets of 3, sets	do	16 00	25
63	Wool			Free.
64	Zinc:			
	Block			Free.
	Sheet	Kilo	16	15
	Manufactured into house piping	do	26	25

METHOD OF CALCULATING DUTIES.

In addition to the percentage specified in the tariff, there is a surcharge of 40 per cent. on all goods. To make the method of calculating duties clear, the following example is given:

The duty on an article valued at \$100, and subject to a duty of 35 per cent.,	
would be	\$35
The surcharge of 40 per cent	14
Total	49

It is not possible to give the equivalent in United States money, as the values are continually changing, owing to the variations in the rate of exchange on London and the uncertainty of the prospective action of Congress with respect to the paper currency and the surcharge on duties. The duties, although fixed in Chili silver currency, are paid in paper currency, owing to which the above-mentioned surcharge is made.

The full tariff of Chili was printed in Consular Reports No. 35, p. 151; the changes in No. 41, p. 407.

ECUADOR.

Tariff of Ecuador on the following products and manufactures of the United States.

[Prepared by Consul-General Owen McGarr.]

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
1	Agricultural implements.....	Kilo	\$0. 05	Pound	\$0. 017
2	Animals: Cattle, hogs, horses, mules, sheep, and all others.....	.....	Free.....	.....	.....
3	Art works.....	Kilo	. 12	Pound	. 041
4	Bark and extracts.....	do	. 25	do	. 0852
5	Blacking.....	do	. 25	do	. 0852
6	Bones, hoofs, horns, &c.....	do	. 25	do	. 0852
7	Books.....	.....	Free.....	.....	.....
	Maps.....	Kilo	. 25	Pound	. 0852
	Engravings, &c.....	do	. 25	do	. 0852
8	Brass and manufactures of.....	do	. 05	do	. 017
9	Breadstuffs:				
	Barley.....	do	. 02	do	. 0073
	Bread and biscuits.....	do	. 25	do	. 0852
	Indian corn.....	.....	Free.....	.....	.....
	Oats.....	Kilo	. 05	Pound	. 017
	Rye.....	do	. 05	do	. 017
	Wheat.....	do	. 05	do	. 017
	Flour.....	do	. 05	do	. 017
10	Bricks.....	.....	.....	.....	.....
11	Brooms and brushes.....	Kilo	. 25	Pound	. 0852
12	Candles.....	do	. 25	do	. 0852
13	Carriages.....	do	. 12	do	. 041
	Horse-cars.....	.....	Free.....	.....	.....
14	Cars (railroad, steam).....	.....	Free.....	.....	.....
15	Chemicals.....	Kilo	. 25	Pound	. 0852
16	Clocks and watches.....	do	. 25	do	. 0852
17	Coal.....	.....	Free.....	.....	.....
18	Copper, ore, ingots, bar, and sheet.....	Kilo	. 05	Pound	. 017
19	Cotton:				
	Raw.....	do	. 05	do	. 017
	Manufactures.....	do	. 25	do	. 0852
20	Earthen, stone, and china ware.....	do	. 12	do	. 041
21	Fertilizers.....	.....	Free.....	.....	.....
22	Fish.....	Kilo	. 25	Pound	. 0852
	Codfish.....	do	. 05	do	. 017
23	Flax, hemp, and jute.....	do	. 25	do	. 0852
	Manufactures.....	do	. 25	do	. 0852
24	Fruit:				
	Fresh.....	.....	Free.....	.....	.....
	Dried or preserved.....	Kilo	. 05	Pound	. 017
25	Furs.....	do	. 25	do	. 0852
26	Glass.....	do	. 12	do	. 041
	Bottles.....	do	. 02	do	. 0073
	All other manufactures.....	do	. 12	do	. 041
27	Glucose.....	do	. 25	do	. 0852
28	Glue.....	do	. 25	do	. 0852
29	Gunpowder, prohibited, except by Government.....	.....	.....	.....	.....
30	Hair.....	Kilo	. 25	Pound	. 0852
31	Hay.....	do	. 25	do	. 0852
32	Hides and skins.....	do	. 25	do	. 0852
33	Honey.....	do	. 25	do	. 0852
34	Hops.....	do	. 02	do	. 0073
35	Ice.....	do	. 25	do	. 0852
36	India-rubber:				
	Manufactures.....	do	. 25	do	. 0852
	Hose for engines.....	.....	Free.....	.....	.....
37	Iron and steel.....	Kilo	. 05	Pound	. 017
	Manufactures.....	do	. 05	do	. 017
38	Jewelry.....	do	. 50	do	. 017
39	Lamps.....	do	. 25	do	. 0852

Tariff of Ecuador on the following products, &c.—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
40	Lead	Kilo	\$0. 05	Pound ...	\$0. 017
	Manufactures	do	.05	do	.017
41	Leather	do	.25	do	.0852
	Manufactures	do	.25	do	.0852
42	Lime	do	.02	do	.0073
	Cement	do	.05	do	.017
43	Malt liquors	do	.12	do	.041
44	Medical instruments	do	.25	do	.0852
45	Naval stores:				
	Rosin	do	.25	do	.0852
	Tar	do	.25	do	.0852
	Oakum	do	.05	do	.017
	Turpentine	do	.25	do	.0852
	Pitch	do	.02	do	.0073
	If for domestic steamers		Free		
46	Oil-cake and meal	Kilo	.12	Pound ...	.041
47	Oils, animal, mineral, and vegetable	do	.12	do	.041
48	Paraffine and wax	do	.25	do	.0852
49	Paints	do	.12	do	.041
	If for domestic steamers		Free		
50	Paper	Kilo	.05	Pound ...	.017
	Manufactures	do	.05	do	.017
51	Plated ware (jewelry)	do	.50	do	.17
52	Provisions	do	.05	do	.017
	Meats:				
	Fresh	do	.05	do	.017
	Salt	do	.05	do	.017
	Oleomargarine	do	.25	do	.0852
	Lard	do	.05	do	.017
	Butter	do	.05	do	.017
	Cheese	do	.05	do	.017
53	Quicksilver	do	.25	do	.0852
54	Seeds		Free		
55	Soap	Kilo	.25	Pound ...	.0852
56	Spirits	do	.12	do	.041
57	Starch	do	.05	do	.017
58	Sugar	do	.05	do	.017
	Molasses	do	.05	do	.017
59	Tin	do	.05	do	.17
60	Tobacco:				
	Leaf, cigars and cigarettes	do	.50	do	.017
61	Vegetables		Free		
62	Wood	Kilo	.25	Pound ...	.0852
	Manufactures of, including furniture put together	do	.25	do	.0852
	Furniture in pieces	do	.12	do	.041
63	Wool	do	.37	do	.126
64	Zinc	do	.05	do	.017

In addition there is a municipal tax of 20 per cent. on the total amount of the tariff collected upon all articles.

The full tariff of Ecuador was printed in Consular Reports No. 72, p. 491.

PERU.

Tariff classification and rates of duty of Peru.

[Prepared by Consul H. M. Brent.]

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Rates.	Unit.	Rates.
			<i>Soles.</i>		
1	Agricultural implements, 5 per cent. ad valorem.				
2	Animals, 10 per cent. ad valorem.				
3	Works of art, 45 per cent. ad valorem.				
4	Bark and extracts, 40 per cent.	Kilo	2. 00	2, 204 lbs.	\$1. 51
5	Blacking, 45 per cent.	do	. 18	do	. 12
6	Bones, hoofs, horns, &c., not specified.				
7	Books, maps, engravings, &c., 10 per cent.	do	. 50	do	. 37½
8	Brass, and manufactures of, 45 per cent.	do	70 to 1. 70	do	\$0. 52 to 1. 22
9	Breadstuffs:				
	Barley, 10 per cent.	do	. 02	do	. 0015
	Bread, &c., 70 per cent.	do	. 06	do	. 004
	Indian corn, 10 per cent.	do	. 02	do	. 0015
	Oats, 10 per cent.	do	. 02	do	. 0015
	Rye, 10 per cent.	do	. 02	do	. 0015
	Wheat	Sack of 52 kilos.	. 60	114 lbs.	. 45
	Flour, 10 per cent.	Kilo	5 to . 10	2, 204 lbs.	37 to . 0075
10	Bricks.				
11	Brooms and brushes:				
	Hand-brushes, 45 per cent.	Dozen	. 50	Dozen ...	. 375
	Brooms, 45 per cent.	do	3. 00	do	2. 25
12	Candles:				
	Stearine and paraffine, 70 per cent.	Kilo	. 30	lbs.	. 22
	Tallow, 70 per cent.	do	. 18	do	. 12
	Sperm, 70 per cent.	do	. 80	do	. 56
13	Carriages and horse-cars:				
	Two-wheeled carriages, 50 per cent.	Each	2. 00	Each	150. 20
	Four-wheeled carriages, 50 per cent.	do	600 to 800. 00	do	450 to 600
	Horse-cars, special agreement.				
14	Railway cars, special agreement.				
15	Chemicals, 40 per cent. ad valorem.				
16	Clocks and watches:				
	Clocks, 45 per cent. ad valorem.				
	Watches, 10 per cent.	do	10 to 60. 00	do	7. 51 to 45
17	Coal, 10 per cent.	Kilo	. 01	2, 204 lbs.	. 0075
18	Copper:				
	Ore, not specified.				
	Ingots, bar, sheet, 45 per cent. ad valorem.				
19	Cotton, 40 per cent.	do	. 20	do	. 15
	Manufactures, 40 per cent. ad valorem.				
20	Earthen, stone, and china ware, 45 per cent.	Decimeter	. 10	10" or 1 meter.	. 075
21	Fertilizers, not specified.				
22	Fish:				
	Dry and smoked, 15 per cent.	Kilo	. 05 to . 10	2, 204 lbs	. 037 to . 0075
	Same, in case, 15 per cent.	do	. 10	do	. 0075
23	Flax, hemp, and jute, manufactures of, 10 per cent.	do	. 10	do	. 0075
			. 20		. 015
			. 25		. 018
24	Fruits, preserved, 40 per cent.	do	. 10 to . 30	do	. 0075 to . 225
25	Furs, not specified.				
26	Glass, 45 per cent.	do	. 15	do	. 115
	Manufactures, 45 per cent. ad valorem.				
27	Glucose, not specified.				
28	Glue, 20 per cent.	do	. 75	do	. 055
	45 per cent.	do	. 15	do	. 012

Tariff classification and rates of duty of Peru—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Rates.	Unit.	Rates.
			<i>Soles.</i>		
29	Gunpowder: Hunting, 45 per cent	Kilo	.40	2,204 lbs.	\$0.31
	For cannon and small arms, prohibited.				
30	Hair, 45 per cent	do	.25	do	.18
31	Hay, 40 per cent	do	.01	do	.0075
32	Hides and skins, not specified.				
33	Honey, 40 per cent	do	.30	do	.225
34	Hops, 10 per cent	do	.02	do	.015
35	Ice, 10 per cent	do	.04	do	.030
36	India-rubber manufactures, 45 per cent. ad valorem.				
37	Iron and steel manufactures: Iron: For agricultural and mining, 5 per cent. ad valorem. Other classes, from 5 to 45 per cent. ad valorem. Steel: Agriculture and mining, 5 per cent. ad valorem. Other classes, from 10 to 45 per cent. ad valorem.				
38	Jewelry: Fine, 10 per cent. ad valorem. Imitation, 45 per cent. ad valorem.				
39	Lamps: For mines, 45 per cent	Dozen	3.00	Dozen	2.25
	House use, 45 per cent	Decimeter of covering.	.20	Decimeter of covering.	.150
40	Lead: Manufactures, 45 per cent	Kilo	.08	2,204 lbs.	.06
	Manufactures, 45 per cent	do	.10	do	.075
41	Leather, 45 per cent. ad valorem. Manufactures, 45 per cent. ad valorem.				
42	Lime, 45 per cent	do	.01	do	.0075
	Cement, 10 per cent	do	.01	do	.0075
43	Malt liquors: In bottles, 70 per cent	Dozen	3.00	Dozen	2.25
	In barrels, &c., 70 per cent	Liter	.23	1.05 quarts.	.172
44	Medical instruments, 45 per cent. ad valorem.				
45	Naval stores: Rosin and tar, 10 per cent	Kilo	.02	2,204 lbs.	.025
	Turpentine and pitch, 20 per cent.	Liter	.20	1.05 quarts	.05
46	Oil-cake and meal, not specified.				
47	Oils: Animal, 45 per cent	do	.23	do	.172
	Mineral, 45 per cent	do	.15	do	.112
	Vegetable, 10 per cent	do	.08	do	.060
48	Paraffine and wax, 45 per cent	Kilo	.20	22,046 lbs.	.150
	Do	do	.50	do	.375
49	Paints, 45 per cent. ad valorem.				
50	Paper, 45 per cent. ad valorem. For newspapers, 10 per cent	do	.20	do	.15
	Manufactures of, not specified.				
51	Plated ware, 45 per cent	do	2.00	do	1.50
52	Provisions: Meats: Fresh, 10 per cent. ad valorem per head Salt, 15 per cent	do	.15	2,204 lbs	.11
	Oleomargarine, unknown here.				
	Lard, 40 per cent	do	.25	do	.18
	Butter, 70 per cent	do	.40	do	.30
	Cheese, 70 per cent	do	.10	do	.75
53	Quicksilver, 10 per cent	do	.60	do	.45
54	Seeds, 10 per cent	do	.15	do	.11
55	Soap, 70 per cent	do	.15	do	.11
56	Spirits, 70 per cent	Dozen	3.00	Dozen	6.00
	In wood, 70 per cent	Liter	.60	1.05 quarts.	.450
	Over 30 per cent. proof, 70 per cent.	do	1.20	do	.90
57	Starch, 40 per cent	Kilo	.15	2,204 lbs.	.11
58	Sugar, 70 per cent	do	.25	do	.18
	Molasses, 40 per cent	do	.30	do	.22

Tariff classification and rates of duty of Peru—Continued.

Number.	Tariff classification.	Tariff rates of duty.		Equivalent in United States money.	
		Unit.	Rates.	Unit.	Rates.
59	Tin, 45 per cent	Kilo	<i>Soles.</i> .30	2,204 lbs ..	\$0 22
60	Tobacco:				
	Leaf, 70 per cent	do	.90	do	.67
	Cigars, 70 per cent	do	2.00	do	1.50
	Cigarettes, 70 per cent	do	3.00	do	2.25
61	Vegetables:				
	Fresh, 10 per cent	do	.05	do	.03
	Preserved, 40 per cent	do	.08	do	.06
62	Wood, 10 to 45 per cent. ad valorem, according to class.				
	Manufactures (furniture, &c.), 50 per cent.	do	.12	do	.09
63	Wool:				
	Unwashed, 40 per cent	do	.12	do	.09
	Washed, 40 per cent	do	.16	do	.12
64	Zinc:				
	Ingot or bar, 20 per cent	do	.10	do	.075
	Sheets, 20 per cent	do	.12	do	.09
	Manufactures of, 45 per cent	do	.30	do	.22

UNITED STATES OF COLOMBIA.

Tariff of duties on imported merchandise in the Republic of Colombia.

[Transmitted by Consul Vifquain.]

ARTICLE 1. Foreign merchandise on its importation into the national territory is subject to the following duties for each kilogram :

Food and condiments :

Yams or sweet potatoes, potatoes, onions, Indian corn, rice, peas, lentils, beans, and every kind of vegetable, garden stuff, and fresh fruit	\$0 01
Garlic	05
Different kinds of flour, including sago, arrow-root, tapioca, corn starch, and similar articles	05
Codfish and meat, in pickle, and fish and meat not prepared in general	05
Sugar	05
Hazel-nuts, nuts, and almonds in their shell, and in general all unprepared food not mentioned	10
Vermicelli and similar pastes	10
Preserved food, as mortadela, salmon, ham, sweet meats, confitures, preserved and dried fruits, &c., also pickles and condiments of all kinds not specially mentioned	20
Olives, in barrels	10
Tea	70
Cinnamon	30
Saffron	1 20
Anise seeds	20
Ice	01

Liquors :

Beer and other fermented liquors	10
Yeast, or other fermented or unfermented stuff, liquid or solid, for making beer and condensed beer	02½
Ordinary claret, in pipes or barrels and demijohns	02½
White and sweet wines, in pipes or barrels	05
All other wines	40
Spirituous liquors, as brandy, rum, gin, whisky, rosoli, &c., and the essences for making same	40

Other liquids :

Vinegar, in barrels	05
Olive oil, in jars or tins	05
Olive oil, in bottles	10
Linseed oil for preparing paint	10
Black writing ink	05
Colored writing ink	10
Inks for printing, book-binding, and lithography, liquid or solid	01
Liquids in general, except perfumery and others specified	20

Cotton :

Cotton manufactured into unbleached cloth, without any white and colored part, and without figures or sewing	40
In blue fulas or white cloth, or unbleached, with white parts, smooth, without coloring, figures, sewing, or embroidery, such as those known as bogotanas, calicots, liencillos, madapolanes, croydons, and others of the same kind	50
Drills and other white and colored fabrics not mentioned in other parts of this tariff	60
Coverlets, Marseilles and figured, and damasked fabrics not comprised in other groups, and velveteen, tape, and ribbons	70
Ordinary handkerchiefs, with or without borders, shawls and ruanos, and fabrics for making same	80
Socks and other textiles, commonly called tricot material, as undershirts, drawers, and gloves, muslins, lawns, and other transparent fabrics, damasks, carpets, hammocks, and ready-made clothing, without embroidery, laces, or other ornaments of articles subject to higher duties	90
All kinds of embroidered fabrics, or meshed, and their imitations, inclusive, laces, insertions, and other similar, and ready-made clothing not mentioned in other groups	1 20
White thread	40
Colored thread	60
Fringes, galloons, cords, braids, tassels, and similar objects	90
Wicks for lamps and tinder-boxes	20
Wicks and twisted cotton for bugies, candles, or matches	10
Cords for bridle reins	20

Hemp and linen :

Empty sacks or bags of hemp, tarred or not, with or without impermeable paper, and also the ordinary fabric they are made of	02½
Coleta	10
Common unbleached fabrics, as creguela, sheeting, brin, duck, caserillo, and fabrics for awnings, excepting drills	30
Fine unbleached fabrics, excepting drills and the other fabrics mentioned in the following groups of this tariff	60
Brown, white, and colored drills, creas, platillos, ulemanisco, fabrics for table-cloth, towels, and napkins, bed-covers, lining for beds, ribbons, sheeting, and similar articles, which are not specified in other clauses of this tariff, all of them without sewing or embroidery	80

*Tariff of duties on imported merchandise in the Republic of Colombia—Continued.***Hemp and linen—Continued.**

Handkerchiefs, caps, socks, gloves, britannias, coquillo, estopilla, picardia, irlandia, labales, roarrandop, fine cambric, and listados imitating that fabric, of cotton, fringes, galloons, bandages, braids, cords, tassels, and other similar articles and ready-made clothing, without embroidery, lace, or other ornaments, which may belong to goods subject to a higher duty.....	\$1 00
All kinds of embroidered fabrics or meshed, and its imitations, including laces, embroideries, and similar articles, and in ready-made clothing not mentioned elsewhere.....	1 20
Thread.....	40
Tarred cords and ropes.....	05
Cords not mentioned before.....	40
Varnished fabrics for roofing of country buildings and bridges.....	05
Common fabrics, prepared or varnished, for floors, and common oil-cloth for coaches, not comprising that for table covers.....	20

Wool:

Wool not manufactured.....	05
Blankets.....	50
Thread for knitting, &c.....	60
Carpets for floor or rugs.....	70
Baize, heavy coarse cloth, serge.....	90
Transparent fabrics, all kinds of embroidered or meshed fabrics and its imitations, including laces, embroidery, and the like articles, and ready-made clothing.....	1 20
All other fabrics not mentioned in this tariff.....	1 00

Silk:

Silk in threads, fabrics, &c.....	1 20
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Various fabrics and threads:

Brocades and other fabrics of gold, silver, or other metals, as also thread of the same material.....	1 20
Fabrics of horse hair, and other material not mentioned.....	60
Oil-cloth for coverings of furniture, and all covers not mentioned.....	60
Patterns in small pieces up to 25 kilograms.....	01
Mixed fabrics pay the same as the highest classed material they contain.	

India-rubber:

India-rubber not manufactured.....	40
Shoes, boots, and all kind of shoes, life-preservers, and fabrics for leggings and ruanas, which do not contain wool or silk.....	80
Tubes, hose, and pipes, for pumps, drains and roofs, and india-rubber prepared for machinery and flooring, except hose for fire-engines, which pay only 1 cent per kilogram....	05
Covers or stoppers for bottles.....	10
Elastic cloth for books.....	60
Buttons not covered.....	40
Manufactured in any other form.....	1 00

Hides or skins:

Hides or skins not prepared, except those enameled.....	20
Enameled leather not manufactured.....	30
Boots, shoes, &c.....	1 00
Gloves, caps, skins for adorning dresses, &c., pocket-books, cigar cases, satchels, and other similar articles.....	1 20
Manufactured in other forms not mentioned.....	1 00

Earthenware:

Common earthenware and stoneware in any form.....	10
Porcelain ware and Chinaware.....	20
Empty jars or pots, bottles, flasks or small flasks of earthenware for filling, and in general the common pottery.....	02½
Tube, pipes and channels for pumps, drains and roofs.....	05

Crystal and glass:

Common demijohns and bottles of black or transparent glass for filling.....	01
Empty common flasks and small flasks of glass.....	05
Plate glass without quicksilver.....	05
Looking-glasses up to 25 centimeters size.....	20
Looking-glasses of more than 25 centimeters size.....	40
Beads, pearls, avalorios, beads in form of stones and jewelry, glasses for watches and lenses, and others similar.....	60
In any other form.....	20

Articles for illuminating and other uses:

Wax, white, yellow, or laurel, not manufactured.....	30
Wax, white, yellow or laurel, in candles or other form.....	40
Crude sperm oil.....	20
Sperm candles, &c.....	30
Stearin and paraffine not manufactured.....	02½
Idem, in candles, &c.....	30
Unmanufactured tallow.....	01
Tallow candles and others for which duties are not specially fixed.....	20
Petroleum.....	10
Wooden matches.....	20
Wax matches.....	40

Drugs and medicines:

Drugs and medicines in general, except sulphur and alum, which pay 20 cents the kilogram, sulphuric acid and nitre, which pay 5 cents, and potash or caustic soda, the ashes and salts of soda, rosin and subcarbonate of potash and of soda, which pay 2½ cents.....	30
As medicines are comprised the objects applicable in sickness, as trusses, suspenders, &c., but not the vessels and utensils of porcelain, &c., for apothecary shops, nor surgical instruments and the like objects, which pay according to the ordinary dispositions of the tariff.	

Perfumery and soaps:

Florida water, Divina, and Kananga.....	30
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Tariff of duties on imported merchandise in the Republic of Colombia—Continued.

The further articles of perfumery and toilet, as essences, soaps, cream, razor-straps, tooth-brushes, and cloth-brushes, &c., not mentioned in any other part of this tariff.....	\$1 20
Common soap, of oil.....	20
Common soap, of rosin or tallow.....	05
Paper and pasteboard:	
Paper, in newspapers, pamphlets, and printed sheets.....	01
White, without glue and colored, for printing.....	05
Straw or any other ordinary kind for wrapping up or packing.....	05
Sand-paper.....	05
Cigarette paper.....	05
Writing paper, envelopes, and any other kind not mentioned, and office utensils which are not mentioned elsewhere.....	20
Fine white paper (foolscap paper).....	10
Ruled paper for music.....	30
Blank books, ruled or not, note books.....	40
Printed books.....	20
Paper and card-board in sheets, maps, and engravings of any kind, and written or printed music.....	40
Gilt or silvered entirely.....	40
Tapestry paper, and marbled or colored, for covers of books and other uses.....	20
Card-board, for printing, bookbinding, lithography, and other industrial uses.....	05
Card-board, in any other form, except in playing-cards, which pay \$1.20 the kilogram.....	20
Wood:	
Lumber for construction, as poles, beams, railroad sleepers, beams, and boards, not planed or dressed.....	00
Planed common wood, and planed wood for cabinet-making, or not planed, which is not carved, except veneering.....	01
Veneering.....	20
Moldings, carvings, and adornments, for furniture and frames, gilt or not.....	30
Beds, large tables for dining-rooms, presses or large chests of drawers for linen and other uses, without looking-glasses, sculpture, carved, or adornments.....	05
All kind of furniture with looking-glasses, sculpture, carved, or upholstered with wool or silk.....	30
Furniture not mentioned.....	20
In furniture of any kind, not including mattresses, cushions, &c., when imported separately, which belong to the class assigned to their cover.....	
Statues or images and altars for churches.....	20
Organs and pianos.....	10
Harmoniums, hand-organs, and harps.....	20
Other musical instruments.....	1 00
Pencils (for office use and carpenters).....	20
Molds, squares (instruments of arts and professions).....	20
Large bellows, for forges.....	05
Bellows of all kinds, except large ones for forges.....	20
Uncovered wooden saddle-trees.....	20
Buckets or troughs.....	05
Barrels, pipes, or casks, put together or not, for packing and filling.....	02½
Cocks for barrels and pipes.....	05
Empty common wooden boxes finished in rough, put together or not, for filling.....	02½
Boards for match-boxes and in matchwood.....	05
Cars and carriages for railroads.....	00
Cars and trucks for transport of goods and similar use.....	02½
Coaches and carriages of all kinds.....	05
Velocipedes.....	40
Ships, entire or in pieces, which are brought to navigate the interior waters of the Colombian territory.....	01
Oars for boats.....	05
Houses in pieces.....	01
Windows, doors, &c., when shipped separate.....	05
Machinery for ships, arts, and trades, industries, agricultural, and for mines.....	05
Canes without swords (sword-canes pay the same as arms).....	80
Wood in forms not described.....	40
Heniquen, hemp, and other similar articles:	
Empty sacks or bags of fiber and hemp, tarred or not, with or without impermeable paper, and also the fabric they are made of.....	02½
Hay and waste in its raw state.....	01
Palm for making hats.....	05
Esparto, straw, and common cane, not manufactured or in brooms.....	05
Willow baskets or other cane.....	20
Mats or small mats, of all kinds.....	05
Iron and steel:	
Iron not manufactured.....	01
Rails, spikes, and similar pieces for railroads for public use.....	00
Rails for roads, which are not for public use.....	05
Ships or pieces for same.....	01
Anchors, grappings for smaller crafts.....	02½
Bridges for public roads.....	
Bridges not for public roads.....	05
Gas meters, apparatus, tubes, and lanterns for public lighting in towns.....	
Objects destined for building or repairing prisons.....	
Wire for public telegraphs.....	
Wire for private telegraphs.....	02½
Iron or steel wire for fences.....	02½
Railings for the embellishment of public buildings and squares.....	
Lightning conductors.....	
Tubes, for public district water works, and fountains or fonts for same.....	00

Tariff of duties on imported merchandise in the Republic of Colombia—Continued.

Iron and steel—Continued.	
Towers for light-houses and beacons	\$0 01
Clocks for towers, including their dials and bells	05
Houses and galvanized sheets to cover the roofs	01
Balustrades for buildings, doors, and windows, when shipped separately	05
Fire-engines	01
Hydraulic pumps and machines, with their respective tubes and pipes	05
Machinery exceeding 1,000 kilograms in weight	01
Machinery for manufactures and mines	01
Agricultural machines	02½
Machinery for arts, trades, and industries	05
Machinery of any kind, weight not exceeding 1,000 kilograms	05
Presses for printing, bookbinding, lithography	02½
Motors of any kind and power	02½
Tinned metal, in sheets or sheet tin	05
Motors and large tubes for machines to clean coffee	02½
Large boilers	05
Tanks for drinking water	01
Stamps for mills used for crushing quartz mineral	05
Anvils and pulleys	05
Ploughs	02½
Iron or steel, manufactured in sheets or rods, not comprised as unmanufactured iron, beds, heavy chains, safes or strong boxes, nails, untinned kitchen utensils or tinned only inside, irons for ironing linen, and large and voluminous tools for agriculture, stone-cutting, as hoes, adzes, bars, large bars, or excavators, reaping-hooks and hatchets, large augers, shovels, large hammers, pick-axes, augers, pruning hooks, and machetes for cutting brush, their length not exceeding 43 centimeters	05
Tools for blacksmiths, stone-cutting, carpenters, and masons.	20
Molds (tools for arts and trades)	20
Wire, iron rings, hinges, screws, and springs for furniture	20
Furniture	20
Hoops or bands, wheels, axles, springs, and cones, for cars and carriages	05
Levers, scales, or balances which indicate more than 100 kilograms	10
Idem, idem, which indicate up to 100 kilograms	20
Combs for horses and curry-combs	20
Kitchen utensils and other objects of brass or iron, tinned inside and outside	20
Knives for arts and trades, as those for book-binding and book-making	20
Cutlery not mentioned in other parts	40
Weapons, fire-arms or any other kind, including guns	1 00
Knives and scissors, fine or medium, knives and forks, with handles of ivory, mother-of-pearl, plated and britannia metal, nipples for firearms, gilt or plated beads, pencil cases, jewelry and gilt and plated objects, or those called electro-plate, or German silver, fine or medium	1 00
Steel in bars or rods for manufacturing and as augers	20
Iron or steel manufactured into forms not described	1 00
Copper or bronze:	
Copper and bronze not manufactured in bars or ingots	10
In sheets of any weight	10
In large pans or kettles or articles of other kind, their weight exceeding 25 kilograms	20
In objects, the weight of every piece exceeds 500 grams, but not 25 kilograms	40
In objects, their weight not exceeding 500 grams	50
Jewelry, beads, galloons, spangles, tassels, tube-shaped beads, thread, and other similar objects, and in electro-plated pieces, and cartridges for fire-arms	1 00
Statues, destined for the ornament of buildings and public squares	00
Tin:	
Tin in ingots	10
As plates or any other object	40
Pulverized or in sheets	50
Lead:	
Lead in ingots or in sheets, tubes, or other objects, their weight exceeding 5 kilograms, and as shot or objects for printing	05
Toys and paper, or in thin sheets	70
Caps for bottles	10
In any other form	40
Zinc:	
Zinc not manufactured in sheets, including zinc for covering roofs and as tubes	05
Manufactured in any other form	40
Quicksilver	
20	
Gold:	
Gold in bars	02½
In coins not inferior to the standard of 900 fine	00
In any other form	1 20
Silver:	
Silver in bars	02½
In coins not inferior as the standard of 900 fine	00
In any other shape	1 20
Powder:	
Coarse and ordinary powder for mines, in barrels or otherwise packed, its gross weight exceeding 2 kilograms	10
Fine-grained powder, in tins or other make up, and in general the class not comprised in the foregoing paragraph	60
As fire-works	70
Stone, materials for construction, and other crude materials:	
Filtering stones	02½
Stones for lithography, grinding, whet, and pumice stones	05
Flints	10

Tariff of duties on imported merchandise in the Republic of Colombia—Continued.

Stone, materials for construction, and other crude materials—Continued.

Marble and jasper, in tiles and bricks	\$0 02½
not in tiles or bricks nor in lithograph stones	20
as dust, clay, or roman cement, lime, crude plaster of paris, or in powder, chalk, feldspar, silicate, bone-dust, and other crude materials for the manufacture of earthenware	02½
Statues and monuments destined to ornament of buildings and public squares	00
Slate for roofing	02½
Clay tiles	00
Shingles	01
Materials for construction, as rough stones, bricks, and tiles, of clay and stone	00
Plaster of paris manufactured in any form not mentioned in any other part of this tariff	20
Colored earth for buildings	05
Alabaster in any form	20
Crucibles for melting	05
Sundries:	
Live animals	00
Mineral coal	01
Tar	05
Black pitch, used in constructing vessels	05
Rosin	01
Common glue	20
Oakum or filastic, or felt for packing	05
Varnish	20
Paint, in powder or prepared	20
Common brushes	20
Brushes for horses or boots	20
Blacking for boots	20
Black wax	05
Seeds, roots, and bulbs, or shoots of plants and live plants	01
Guano	05
Hops	10
Tobacco in leaves or cut for cigarettes	05
Idem, prepared for chewing	30
Idem, manufactured	60
Bones and horns not manufactured	05
Tubes, gutters, and pipes, of wood, india-rubber, earthenware, clay, or metal, for pumps, drains, roofs, except for fire-engines	05
Slow-matches for mines	05
Cork-wood in boards or in corks, for bottles, &c	10
Common buttons of bone, horn, ivory nut, and paste, without cover	40
Common buttons of mother-of-pearl shell	60
Common horn combs	40
Slates, slate-pencils for writing	05
Precious stones	1 20
Umbrellas	80
Hats, caps, &c., pay respectively; also the ready-made clothing, as the fabrics or materials they are made of; except those of straw, which pay \$1.20 each kilogram, and 60 cents when ordinary	
Objects introduced for account of the National Government	Free.
Articles which for their own use bring, or import, foreign ministers or diplomatic agents, who come accredited to the Government of the Republic, provided that those nations they represent concede equal grants to ministers and diplomatic agents of the republic, and that the requisites the law imposes on this subject are complied with	Free.
The natural productions of Ecuador, Venezuela, Peru, and other nations to which has, or will be, conceded by public treaties, franchise with character of reciprocity	
Luggage of passengers up to 100 kilograms for each person, if evident that the articles are for their own use, and are presented by them personally when passing through the custom-house and enter the national territory. For the excess without invoice they pay as goods of the highest class of this tariff	
All articles not mentioned in this tariff pay	1 20

Paragraph. The before specified goods form, in consequence, one class exempt of duty, and thirteen charged with 1, 2½, 5, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, and 120 cents, respectively, and are called as to their order, first, second, third, &c.

The secretariate of hacienda will form and publish a résumé of this tariff, dividing it into the expressed classes.

ART. 2. The importation of money inferior to the standard of 900 thousands fine is prohibited, as also machinery for making money, arms, and ammunition of war, if not done by the National Government.

ART. 3. The transit through the national territory of machinery, arms, and ammunition, mentioned in the foregoing article, and nitro-glycerine, is equally prohibited.

ART. 4. Additional 25 per cent. on the ordinary duties of import, established by decree No. 693 of 1885, will continue to be collected for the articles indicated in the same decree.

ART. 5. The dispositions of this decree will commence to be put in force from the 1st of October 1886

URUGUAY.

Duties as collected under tariff law of Uruguay, taking effect September, 1886.

[Report of Consul Bridgers.]

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevidean gold.		Duty.
		Montevideo.	United States.			
1	Agricultural implements:					<i>Pr.ct.</i>
	Sowing-machines.....	Each	Each	\$8 00 to \$70 00		8
	Corn-crushers	do	do	8 00		8
	Corn-shellers	do	do	6 00 to 300 00		8
	Grain-winnowers.....	do	do	20 00 to 100 00		8
	Harrows	do	do	15 00 to 50 00		8
	Scythes	do	do	75 00		8
	Scythes and reapers combined.....	do	do	150 00		8
	Reaper and binder.....	do	do	200 00		8
	Thrashers (steam).....	do	do	50 00 to 1,500 00		8
	Plows	do	do	5 00 to 20 00		8
	Shovels	Dozen	Dozen	1 20 to 10 00		8
	Pickaxes	do	do	3 00 to 7 00		8
	Rakes	do	do	2 40 to 6 00		8
	Hoes (large).....	Kilo	2.2 pounds	15 to 25		8
	Hoes (small).....	do	do	15		8
2	Animals.....	Free				8
3	Art works: Monuments, statues, &c. (marble), valued at custom-house.					30½
4	Bark of various kinds.....	Kilo	2.2 pounds	6 to 1 50		47
	Extracts of various kinds.....	do	do	20 to 30 00		47
5	Blacking, in bottles and boxes.....	Dozen	Dozen	25 to 1 20		30½
6	Bones, hoofs, horns, &c., not in tariff.					
7	Books of all kinds (bound).....	Kilo	2.2 pounds		60	8
	Books of all kinds (not bound).....	do	do		60	6
	Prayer-books, with covers of tortoise-shell, ivory, Russian leather or imitation, &c.	Dozen	Dozen		36 00	30½
	Maps	Kilo	2.2 pounds		2 00	6
	Engravings of all kinds.....	do	do		4 00	30½
8	Brass:					
	Sheets or bars.....	do	do		50	30½
	Ingots	do	do		50	20
	Powder	do	do		2 00	30½
	Manufactures:					
	Oil-cans	Dozen	Dozen		8 00	30½
	Wire	Kilo	2.2 pounds		48	30½
	Knockers	do	do	1 00 to	1 50	30½
	Chandeliers, for gas, kerosene, &c.....	do	do		1 50	30½
	Large rings	do	do		70	30½
	Hinges	do	do		1 00	30½
	Pumps, Nos. 1 to 3.....	One	One		15 00	30½
	Chains	Kilo	2.2 pounds		1 00	30½
	Beds	One	One	17 00 to	60 00	30½
	Padlocks.....	Dozen	Dozen	70 to	2 50	30½
	Candlesticks	Kilo	2.2 pounds		70	30½
	Faucets	do	do		1 50	30½
	Cannons (toy).....	do	do		1 00	30½
	Pipes	do	do		60	30½
	Bells (small), for dogs' collars, &c.....	do	do		1 00	30½
	Door and window bolts (Spanish).....	Dozen	Dozen	6 50 to	28 80	30½
	Collars for dogs.....	Kilo	2.2 pounds		1 40	30½
	Compasses	Pair	Pair		80	30½
	Stirrups.....	Kilo	2.2 pounds		65	30½
	Lanterns	One	One	1 80 to	10 00	30½
	Hooks (small).....	Kilo	2.2 pounds		1 20	30½
	Screens (fire).....	One	One		20 00	30½
	Fire sets	do	do		2 40	30½
	Knobs	Kilo	2.2 pounds		1 50	30½
	Pulleys	do	do		1 00	30½
	Levels	Dozen	Dozen		7 20	30½

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevidean gold.	Duty.
		Montevideo.	United States.		
8	Brass—Continued.				<i>Pr. ct.</i>
	Rings for sails.....	Kilo	2.2 pounds	\$1 10	30½
	Bolts	do	do	1 20	30½
	Curry-combs	Dozen	Dozen	80	30½
	Clothes-racks	do	do	1 60	30½
	Ornamental knobs (for beds).....	Kilo	2.2 pounds	1 10	30½
	Smoothing-irons	do	do	1 00	30½
	Smoothing-irons (steam)	Dozen	Dozen	12 00	30½
	Plummets	Kilo	2.2 pounds	70	30½
	Weights	do	do	40	30½
	Door-springs	Dozen	Dozen	1 20	30½
	Castors	Kilo	2.2 pounds	1 00	30½
	Spittoons	12 pairs	12 pairs	9 00	30½
	Solder	Kilo	2.2 pounds	80	30½
	Pans	Kilo	2.2 pounds	80	30½
	Gauze	do	do	1 00	30½
	Inkstands	Dozen	Dozen	24 00	30½
	Screws	Kilo	2.2 pounds	1 00	30½
	Other manufactures not specified in tariff.	do	do	1 10	30½
9	Breadstuffs:				
	Barley, gross weight.....	100 kilos ..	120 pounds	\$4 50 to 9 00	30½
	Biscuits, gross weight	Kilo	2.2 pounds	35	43
	Indian corn	do	do	20	30½
	Oats (not in tariff).				
	Rye, gross weight	do	do	05	30½
	Wheat will pay a specific duty in proportion to the value of same in market, for 100 kilos. or 220 pounds, viz: \$1.25 when its market value is \$4; \$1 when its market value is \$4.01 to \$5; \$0.75 when its market value is \$5.01 to \$6; \$0.25 when its market value is \$6.01 to \$7; \$0.125 when its market value is \$7.01 to \$8, and will be free of duty when its market value is more than \$8.				
	Flour will pay a duty in proportion to the market value of wheat, viz: 32½ per cent. when wheat's value is from \$2.40 to \$3.20; 27½ per cent. when from \$3.21 to \$4; 23½ per cent. when from \$4.01 to \$4.80; 17½ per cent. when from \$4.81 to \$5.60; 15 per cent. when from \$5.61 to \$6.40; 12½ per cent. when from \$6.41 to \$7.20; 10½ per cent. when from \$7.21 to \$8; 7½ per cent. when from \$8.01 or more.				
10	Bricks.				
11	Brooms	Dozen	Dozen	60 to 3 00	30½
	Brushes of all kinds	do	do	60 to 20 00	30½
12	Candles, gross weight	Kilo	2.2 pounds	20 to 80	43
13	Carriages	Each	Each	(*)	47
	Horse-cars	do	do	800 to 1,000 00	30½
14	Cars (railroad steam), not in tariff.				
15	Chemicals:				
	Muriatic acid	Kilo	2.2 pounds	07	8
	Nitric acid	do	do	20	8
	Sulphuric acid	do	do	07	8
	Carbonate of soda	do	do	06	8
	Vegetable colors:				
	Solid	do	do	1 50	47
	Liquid	do	do	40	47
	Dynamite	do	do	80	30½
	All other kinds				47
16	Watches (gold and silver).....	Each	Each	3 00 to 65 00	8
	Clocks	do	do	2 00 to 120 00	30½
	All others not specified in tariff.				30½
17	Coal	1,000 kilos.	2,500 lbs ..	10 00	6
18	Copper:				
	Sheets	Kilo	2.2 pounds	50	30
	Ingot and bars	do	do	40	20½

* Valued at custom-house.

Duties as collected under tariff law of Uruguay, &c.--Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevideo gold.		Duty.
		Montevideo.	United States.			
19	Cotton (raw).....	Kilo	2.2 pounds		\$0 50	<i>Pr. ct.</i> 30½
	Cotton manufactures:					
	Blankets	do	do	\$0 60 to	1 20	30½
	Germanic	do	do		1 20	30½
	Bibs	Dozen	Dozen		1 00	30½
	Gowns	do	do		6 00	47
	Boas	Kilos	2.2 pounds		4 00	30½
	Bombazine	do	do	90 to	1 20	30½
	Wide Russia sheeting (Brin)	do	do	60 to	90	30½
	Stockings	Dozen	Dozen	80 to	2 50	30½
	Drawers.....	do	do		4 00	30½
	Shirts	do	do		6 00	47
	Chemises	do	do	6 00 to	14 00	47
	Undershirts	do	do	3 50 to	8 00	47
	Crumb cloths (1 square yard)	do	do		3 20	30½
	Cassimere	Kilos	2.2 pounds		90	30½
	Cloth	do	do	90 to	1 20	30½
	Vests	Dozen	Dozen		3 60	47
	Tape	100 meters		2 00 to	5 00	30½
	Belts	Dozen	Dozen		80	30½
	Cord	Kilo	2.2 pounds		90	30½
	Bed ticks	do	do		75	30½
	Crape	do	do		10 00	30½
	Cretonne	do	do		1 00	30½
	Collars (for ladies)	Dozen	Dozen	3 00 to	15 00	47
	Collars (for men)	do	do	1 00 to	1 50	47
	Damasks	Kilo	2.2 pounds	1 00 to	1 50	30½
	Aprons	Dozen	Dozen	(*)		30½
	Undershirts	One	One	1 00 to	1 80	47
	Laces	100 meters			50	30½
	Bandages	Kilo	2.2 pounds		3 00	30½
	Linings	Dozen	Dozen		80	30½
	Flannel	Kilo	2.2 pounds		90	30½
	Calico (1.094 yards width)	Meter	1.094 yds..		16	31
	Crash (for towels)	Kilo	2.2 pounds		1 00	30½
	Caps for children	Dozen	Dozen		2 40	30½
	Gloves	12 pairs..	12 pairs..		1 00	30½
	Table-cloths	Kilo	2.2 pounds		1 50	30½
	Jackets	Dozen	Dozen	10 80 to	14 40	47
	Linen	Kilo	2.2 pounds		50	31
	Canvas or sail cloth	do	do		60	30½
	Muslin	Meter	1.094 yds..	10 to	30	30½
	Corduroy	do	do	35 to	60	30½
	Pantaloon	Dozen	Dozen		7 50	47
	Handkerchiefs	Kilo	2.2 pounds	1 00 to	3 20	47
	Umbrellas	Dozen	Dozen		6 00	47
	Shirt-bosoms	do	do		3 00	47
	Cuffs (for gentlemen)	12 pairs..	12 pairs..		1 50	47
	Parasols (for ladies)	Dozen	Dozen	2 00 to	3 00	30½
	Sun-umbrellas (for gentlemen)	One	One		40	30½
	Mufflers	Kilo	2.2 pounds	1 50 to	3 20	30½
	Napkins	do	do	75 to	2 00	30½
	Towels	Dozen	Dozen		80	30½
	Troé	Kilo	2.2 pounds		80	31
20	Earthen, china, and stone ware:					
	Earthenware:					
	Jugs	Dozen	Dozen	2 00 to	8 00	30½
	Filters	One	One	2 00 to	8 00	30½
	Tubes or pipe	do	do	25 to	1 20	30½
	Chinaware (porcelain):					
	Sugar-bowls	Dozen	Dozen	2 40 to	4 30	30½
	Candlesticks	12 pairs..	12 pairs..	3 00 to	5 00	30½
	Tooth-brush dishes	Dozen	Dozen	3 00 to	5 00	30½
	Compotiers	do	do	2 80 to	4 00	30½
	Salad-bowls	do	do	3 00 to	4 80	30½
	Chamber pots (with cover)	do	do	6 50 to	10 00	30½
	Chamber pots (without cover)	do	do	4 50 to	7 00	30½
	Sponge dishes	do	do	1 50 to	2 60	30½
	Flower-vases	12 pairs..	12 pairs..	3 00 to	7 00	30½
	Fruit-stands	Dozen	Dozen	3 50 to	5 50	30½
	Platters	do	do	3 60 to	6 00	30½
	Covered dishes	do	do	6 00 to	10 00	30½
	Egg-stands	do	do	40 to	70	30½
	Soap dishes	do	do	2 40 to	4 50	30½
	Pitchers	do	do	5 00 to	9 00	30½

* Valued at custom house.

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevideo gold.		Duty.
		Montevideo.	United States.			
20	Earthenware, china, and stoneware—Continued.					
	China-ware (porcelain)—Continued.					<i>Pr. ct.</i>
	Jugs	Dozen	Dozen	\$1 60 to	\$2 50	30½
	Milk-pitchers	do	do	2 00 to	3 00	30½
	Butter dishes	do	do	2 40 to	4 20	30½
	Mustard-pots	do	do	1 20 to	3 00	30½
	Basins	do	do	5 00 to	9 00	30½
	Dinner plates	do	do	90 to	1 70	30½
	Ornamental pieces	do	do	4 00 to	8 00	30½
	Plates for dessert	do	do	70 to	1 30	30½
	Stands	do	do	1 50 to	2 40	30½
	Radish dishes	do	do	1 50 to	2 60	30½
	Gravy dishes	do	do	3 00 to	4 80	30½
	Spittoons	do	do	4 00 to	11 00	30½
	Soup-tureens	do	do	9 00 to	16 00	30½
	Cups (small), and saucers for same (tea and chocolate).	do	do	80 to	1 30	30½
	Cups (larger)	do	do	1 20 to	2 10	30½
	Cups without saucers (for soup) ..	do	do	90 to	1 40	30½
	Tea and coffee pots	do	do	3 60 to	6 00	30½
	Inkstands	do	do	3 00 to	4 50	30½
	Set for dining-room, No. 1, viz: 72 plates; 24 plates for dessert, 1 soup-tureen, 2 covered dishes, 6 dishes, round and oval; 1 salad dish, 2 radish dishes, 1 compotier, 1 fruit dish, 12 small cups and saucers for same, 12 large cups and saucers for same, 1 tea-pot, 1 coffee-pot, 1 sugar-bowl, 1 milk-pitcher, 1 butter dish.			14 50 to	25 40	30½
	Set for dining-room, No. 2, viz: 108 plates; 24 plates for dessert, 2 soup-tureens, 2 covered dishes, 6 dishes, round and oval; 2 salad dishes, 2 radish dishes, 12 egg-stands, 2 compotiers, 2 fruit-stands, 2 mustard pots, 18 cups (small) and saucers for same, 18 cups (larger) and saucers for same, 1 tea-pot, 1 coffee-pot, 1 sugar-bowl, 1 butter dish, 1 milk-pitcher.			20 50 to	36 00	30½
	Set for washstand, No. 1, viz: 1 pitcher, 1 basin, 1 soap dish, 1 tooth-brush dish, 2 powder-boxes, 1 sponge dish.			1 60 to	2 80	30½
	Set for washstand, No. 2, viz: 1 pitcher, 1 basin, 1 chamber-pot, 1 soap dish, 1 tooth-brush dish, 1 sponge dish, 1 bottle and tumbler.			2 40 to	4 20	30½
	Tea or coffee set, No. 1, viz: 1 tea-pot or coffee-pot, 1 sugar-bowl, 1 milk-pitcher, 1 butter dish, 12 cups and saucers for same.			1 70 to	2 70	30½
	Tea or coffee set, No. 2, viz: 1 coffee-pot, 1 tea-pot, 1 sugar-bowl, 1 butter dish, 1 milk-pitcher, 24 cups and saucers for same.			3 40 to	5 60	30½
	Tea set, No. 3, viz: 1 waiter, 1 tea-pot, 1 milk-pitcher, 1 sugar-bowl, 2 cups.				1 50	30½
	Tea set, No. 4, viz: 1 waiter, 2 bottles, 1 sugar-bowl, 2 cups.				3 00	30½
	Stoneware:					
	Sugar-bowls and butter dishes	Dozen	Dozen	1 40 to	3 00	30½
	Tooth-brush dishes	do	do	1 60 to	4 00	30½
	Salad and salt cellars	do	do	1 80 to	4 00	30½
	Chamber-pots (without cover)	do	do	2 00 to	5 20	30½
	Chamber-pots (with cover)	do	do	3 60 to	9 00	30½
	Fruit-stands and compotiers	do	do	2 00 to	4 80	30½
	Platters	do	do	2 00 to	6 40	30½
	Covered dishes	do	do	2 80 to	8 50	30½
	Egg-stands	do	do	40 to	60	30½
	Soap dishes	do	do	1 40 to	3 00	30½

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevidean gold.		Duty.
		Montevideo.	United States.			
20	Earthenware, china, and stoneware—Continued.					
	Stoneware—Continued.					<i>Pr. ct.</i>
	Pitchers	Dozen	Dozen	\$2 80 to	\$6 50	30½
	Flour-pots	Pair	Pair		120	30½
	Mustard-pots	Dozen	Dozen	60 to	2 00	30½
	Basins	do	do	2 40 to	6 00	30½
	Plates	do	do	40 to	1 20	30½
	Plates for dessert	do	do	30 to	1 00	30½
	Spittoons	do	do	2 00 to	6 00	30½
	Soup-tureens	do	do	8 00 to	20 00	30½
	Cups	do	do	35 to	2 40	30½
	Tea-pots or coffee-pots	do	do	1 60 to	3 60	30½
21	Fertilizers					
22	Fish:					
	Dried codfish (gross weight)	Kilo	2.2 pounds		15	30½
23	Hemp and jute manufactures:					
	Raw hemp	do	do		50	8
	Twine	do	do		50	30½
	Cordage	do	do	15 to	22	20
24	Fruits:					
	Oranges	Hundred	Hundred		50	20
	Peaches and apples				1 00	20
	Bananas				20	20
	Watermelons	Hundred	Hundred		3 00	20
	Tomatoes, peppers	Hundred	Hundred		50	20
	Cucumbers and quinces					
	Grapes	Kilo	2.2 pounds		20	20
	Ananas	One	One		20	20
	Preserved (all kinds)	Kilo	2.2 pounds		50	51
25	Furs					30½
26	Glass manufactures					
	Chandeliers:					
	2 burners	One	One		15 00	30½
	3 burners	do	do		20 00	30½
	4 burners	do	do		26 00	30½
	5 or 6 burners	do	do		35 00	30½
	7 to 10 burners, in proportion	do	do		55 00	30½
	Sugar-bowls	Dozen	Dozen	1 80 to	5 50	30½
	Waiters	do	do	2 00 to	5 00	30½
	Globes, for lamps	One	One		5 00	30½
	Globes, for street lamps	do	do		3 00	30½
	Bottles of all kinds, for water, &c.	Dozen	Dozen	1 20 to	14 00	30½
	Branches of chandeliers	One	One	3 00 to	7 00	30½
	Candlesticks	12 pairs	12 pairs	5 00 to	10 00	30½
	Compotiers	Dozen	Dozen	2 40 to	8 00	30½
	Preserve-dishes	do	do	4 00 to	12 00	30½
	Fruit-stands	do	do	10 00 to	24 00	30½
	Egg-stands	do	do	40 to	1 00	30½
	Pitchers	do	do	4 00 to	14 00	30½
	Pitchers, with cover for milk	do	do	1 80 to	6 00	30½
	Sets for washstands	Set	Set	3 00 to	5 00	30½
	Decanters, with waiter, and 14 wine glasses.	Dozen	Dozen	6 00 to	24 00	30½
	Flower-stands	Pair	Pair	6 00 to	20 00	30½
	Basins	Dozen	Dozen	4 00 to	14 00	30½
	Lamp-shades	do	do	1 50 to	2 40	30½
	Plates	do	do	1 00 to	2 40	30½
	Cheese dishes	do	do	6 00 to	20 00	30½
	Reflectors	do	do		3 00	30½
	Salt-cellars	do	do	60 to	2 40	30½
	Spittoons	12 pairs	12 pairs	6 00 to	24 00	30½
	Lamp chimnies	Dozen	Dozen		50	30½
	Tumblers	do	do	60 to	3 60	30½
	Window panes, &c.	Box	Box	3 20 to	10 00	30½
	Goblets	Dozen	Dozen	60 to	3 00	30½
27	Glucose, not in tariff.					
28	Glue of all kinds (gross weight)	100 kilos	220 pounds		24 00	30½
29	Gunpowder	Kilo	2.2 pounds	40 to	68	51
30	Hair, not in tariff.					
31	Hay					20
32	Hides and skins, not in tariff.					
33	Honey	Kilo	2.2 pounds		30	30½
34	Hops, not in tariff.					
35	Ice	do	do		04	30½
36	India-rubber manufactures					
	Pipe	do	do		1 20	30½
	Erasers	do	do	1 40 to	3 50	30½

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevidean gold.	Duty.
		Montevideo.	United States.		
36	India rubber manufactures—Continued.				<i>Pr. ct.</i>
	Cord	Kilo	2.2 pounds	\$0 60	30½
	Sheets	do	do	1 30	30½
37	Iron and steel:				
	Iron manufactures:				
	Ingots	100 kilos ..	220 pounds	2 00	20
	Bars	do	do	5 00	20
	Bars, galvanized	do	do	6 50	20
	Sheets	do	do	\$7 75 to 20 00	20
	Iron dust	do	do	20 00	30½
	Wire	ilo	2.2 pounds	05 to 07	8
	Wire, galvanized	do	do	10 to 08	8
	Knockers	do	do	50	30½
	Alphabets	Set	Set	50	30½
	Mortars	Kilo	2.2 pounds	50	30½
	Anchors	do	do	80	30½
	Rings	do	do	09	30½
	Harpoons	do	do	44	30½
	Spits of all kinds	do	do	28 to 4 80	30½
	Sugar-bowls	do	do	45	30½
	Bullets	do	do	10	-----
	Buckets	100 kilos ..	220 pounds	14 50	30½
	Bathing-tubs of all kinds	One	One	5 00 to 40 00	30½
	Rods	Dozen	Dozen	3 50	30½
	Railings	Kilo	2.2 pounds	20	30½
	Crowbars	do	do	10	30½
	Boat-hooks	Dozen	Dozen	4 50	30½
	Anvils	Kilo	2.2 pounds	15 to 60	30½
	Hinges	do	do	13 to 18	30½
	Pumps:				
	Small	Dozen	Dozen	40 00	30½
	Larger	One	One	10 00	30½
	Braziers	Dozen	Dozen	8 00 to 14 00	30½
	Treenails	do	do	1 00	30½
	Stew-pans	Kilo	2.2 pounds	17 to 35	30½
	Chains of all kinds	100 kilos ..	220 pounds	7 60 to 16 20	30½
	Safes	do	2.2 pounds	20	30½
	Kettles	Dozen	Dozen	1 60	30½
	Warming-pans	do	do	7 20	30½
	Beds	One	One	6 00 to 20 00	30½
	Padlocks	Dozen	Dozen	50 to 5 00	30½
	Crotches	Kilo	2.2 pounds	27	30½
	Coal-scuttles	One	One	1 00	30½
	Cots	do	do	3 00	-----
	Anchor-stocks	Kilo	2.2 pounds	10	30½
	Locks of all kinds	Dozen	Dozen	1 00 to 28 80	30½
	Old scrap-iron	100 kilos ..	220 pounds	60	30½
	Nails, for horseshoes	Kilo	2.2 pounds	25	30½
	Nails, other kinds	100 kilos ..	220 pounds	7 00 to 15 00	30½
	Stoves	Kilo	2.2 pounds	20 to 30	30½
	Springs for beds	One	One	9 60	30½
	Collars for dogs	Dozen	Dozen	2 40	30½
	Compasses	do	do	80 to 2 00	30½
	Cold-chisels	Kilo	2.2 pounds	40	30½
	Spoons	do	do	26	30½
	Ladles	do	do	24	30½
	Cradles, painted or gilded	One	One	4 80 to 9 60	30½
	Candle-snuffers	Dozen	Dozen	80	30½
	Axles	One	One	7 00	30½
	Grate	Kilo	2.2 pounds	20	30½
	Iron brushes	do	do	10	30½
	Chamber-pots	do	do	40	30½
	Chain-links	Gross	Gross	2 50	30½
	Spurs	Kilo	2.2 pounds	45 to 90	30½
	Stirrups	do	do	30	30½
	Wire-safes	Dozen	Dozen	24 00	30½
	Bridles	Kilo	2.2 pounds	25 to 60	30½
	Bellows	One	One	25 00	30½
	Hooks	Kilo	2.2 pounds	12	30½
	Jack-screws	One	One	6 00	30½
	Screens	do	do	10 00	20½
	Horseshoes	Kilo	2.2 pounds	20	30½
	Pitchers of iron plate, painted	Dozen	Dozen	4 50	30½
	Pitchers of tinned iron	Kilo	2.2 pounds	45	30½
	Knockers				
	Keys	Kilo	2.2 pounds	45	30½
	Tuning-keys	Dozen	Dozen	4 00	30½
	Hammers, with handles	do	do	2 00	30½

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification	Weights, measures, or number.		Custom-house valuation, Montevidean gold.	Duty.
		Montevideo.	United States.		
37	Iron and steel—Continued. Iron manufactures—Continued.				<i>Pr. ct.</i>
	Hammers, for blacksmiths.....	Kilo	2.2 pounds	\$0 22	30½
	Pulleys.....	Centim'r	.3937 in	04	30½
	Levels	One.....	One.....	3 20	30½
	Kettles.....				
	Basins of tinned iron.....	Kilo	2.2 pounds	\$0 32 to 50	30½
	Gridirons	do	do	18 to 35	30½
	Bolts	do	do	18 to 27	30½
	Pots	do	do	16 to 27	30½
	Clothes-racks	Dozen	Dozen	40 to 1 00	30½
	Knobs.....	Kilo	2.2 pounds	30	30½
	Weights	do	do	40	30½
	Tinned plates	Kilo	2.2 pounds	30	30½
	Pickets.....	do	do	12	30½
	Nut-crackers.....	Dozen	Dozen	1 20	30½
	Rowels for spurs	Kilo	2.2 pounds	60	30½
	Spittoons	12 pairs.....	12 pairs.....	10 00	30½
	Frying-pans.....	Kilo	2.2 pounds	16	30½
	Soup-dishes	Dozen	Dozen	7 00 to 12 00	30½
	Cups of tinned iron	Kilo	2.2 pounds	40	30½
	Teapots (tinned iron)	do	do	80	30½
	Inkstands.....	Dozen	Dozen	24 00	30½
	Screws	Kilo	2.2 pounds	12 to 14	30½
	Lathes for carpenters, &c	do	do	25 to 75	30½
	Scales, with capacity for weighing not over 2.2 pounds.			2 00	30½
	Scales for each 100 kilograms (220 pounds) capacity.			5 00 to 6 50	30½
	Trevets	Kilo	2.2 pounds	30	30½
	Other iron manufactures not specified in tariff.	do	do	20 to 40	30½
	Steel manufactures:				
	Bars and sheets	Kilo	2.2 pounds	20	20
	Steel for sharpening knives.....	Dozen	Dozen	2 00 to 6 00	30½
	Chisels.....	Kilo	2.2 pounds	60	30½
	Chain-links.....	Gross	Gross	2 50	30½
	Spurs	Kilo	2.2 pounds	1 50	30½
	Stirrups.....	do	do	2 00	30½
	Axes	Dozen	Dozen	3 00 to 9 00	30½
	Files	do	do	60 to 4 80	30½
	Scabbards.....	One.....	One.....	3 00	30½
	Table service (forks and knives).....	Dozen	Dozen	75 to 20 00	30½
38	Jewelry, valued at custom-house.....				8½
39	Lamps, valued at custom-house.....				30½
40	Lead and manufactures:				
	Bars or sheets.....	100 kilo.....	220 pounds	7 50	20
	Pipe	Kilo	2.2 pounds	12	30½
	Bullets.....	do	do	12	51
	Ammunition.....	100 kilos	220 pounds	8 00	51
41	Leather, and manufactures:				
	Valises.....	One.....	One.....	6 00	47
	Harness.....	Set	Set	30 00 to 110 00	47
	Cruppers.....	Dozen	Dozen	3 00	47
	Boots and shoes.....	12 pairs.....	12 pairs.....	4 00 to 50 00	47
	Muzzles.....	Dozen	Dozen	10 00	47
	Headstalls	do	do	7 00 to 30 00	47
	Belly-bands	do	do	6 00 to 10 00	47
	Reins	One.....	One.....	2 00 to 4 00	47
	Saddles	do	do	9 00 to 20 00	47
	All others.....				47
42	Lime, not in tariff.				
	Cement	100 kilos.....	220 pounds	1 60	20
43	Malt liquors:				
	Beer, in bottles	Dozen	Dozen	2 60	51
	Beer, in barrels	Liter	1½ quart.....	18	51
44	Medical instruments, not in tariff.				
45	Naval stores:				
	Rosin and pitch.....	Kilo	2.2 pounds	02	20
	Tar	do	do	03	20
	Turpentine	Liter	1½ quart	14	30½
46	Oil cake and meal, not in tariff.				
47	Oils:				
	Animal:				
	Whale	liter	1½ quart	15	30½
	Fish.....	Kilo	2.2 pounds	18	30½
	Vegetable.....	do	do	14 to 1 50	30½
	Kerosene.....	100 liters.....	112½ quarts	4 80	30½

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevidean gold.		Duty.
		Montevideo.	United States.			
48	Paraffine and wax.....	Kilo.....	2.2 pounds	\$0 40 to	\$0 90	<i>Pr. ct.</i> 30½
49	Paints.....	do.....	do.....	18 to	1 44	30½
50	Paper and manufactures.....	do.....	do.....	15 to	4 00	8
51	Plated ware:					
	Castors.....	Dozen.....	Dozen.....		100 00	30½
	Sugar-bowls.....	do.....	do.....		48 00	30½
	Waiters.....	Centimeter.....	.3937 inches		20	30½
	Knives and forks (for salad, &c.).....				24 00	30½
	Spoons:					
	Soup and dessert.....	Dozen.....	Dozen.....		6 00	30½
	Coffee.....	do.....	do.....		3 00	30½
	Stew.....	do.....	do.....		12 00	30½
	Salt.....	do.....	do.....		2 00	30½
	Sugar.....	do.....	do.....		6 00	30½
	Soup-ladles.....	do.....	do.....	15 00 to	24 00	30½
	Sets for washing-stands.....	Set.....	Set.....		60 00	30½
	Pitchers.....	Dozen.....	Dozen.....		36 00	30½
	Sugar-tongs.....	do.....	do.....		5 00	30½
	Nut-crackers.....	do.....	do.....		6 00	30½
	Covered dishes.....	One.....	One.....		10 00	30½
	Forks (same as spoons).....					30½
	Teapots.....	Dozen.....	Dozen.....		70 00	30½
52	Provisions:					
	Meat, salt.....	Kilo.....	2.2 pounds		10	51
	Lard (gross weight).....	do.....	do.....		28	51
	Butter.....	do.....	do.....		63	51
	Cheese, all kinds.....	do.....	do.....		41	51
	Holland cheese.....	Dozen.....	Dozen.....		9 00	51
	Ham (gross weight).....	Kilo.....	2.2 pounds		46	51
53	Quicksilver.....	do.....	do.....		1 20	47
54	Seeds, all kinds.....	do.....	do.....	25 to	1 00	8
55	Soap, all kinds (gross weight).....	do.....	do.....	09 to	16	38
56	Spirits:					
	Alcohol, in bottles of 1 liter (1.125 quarts).....	Dozen.....	Dozen.....		\$1 90	51
	Cider:					
	In bottles of 1 liter (1.125 quarts).....	do.....	do.....		2 50	51
	In barrels.....	Liter.....	1.125 qts..		15	51
	Brandy:					
	In barrels.....	do.....	do.....		35	51
	In bottles of not over 1 liter.....	Dozen.....	Dozen.....	\$2 00 to 3 50 to 6 00		51
	Gin:					
	In bottles.....	Liter.....	1.125 qts..		16	51
	In barrels.....	do.....	do.....		09	51
	Liquors of all kinds in bottles (not over 1 liter).....	Dozen.....	Dozen.....	2 20-4 20-5 70-7 00		51
	Rum:					
	In bottles of not over 1 liter.....	do.....	do.....		5 50	51
	In barrels.....	Liter.....	1.125 qts..		36	51
	Vermouth:					
	In bottles of 1 liter.....	Dozen.....	Dozen.....		3 70	51
	In barrels.....	Liter.....	1.125 qts..		20	51
	Wines:					
	Sherry, Port, Madeira, Rhine, Muscatel, in barrels.....	do.....	do.....		50	47
	Other kinds of wine (not specified).....	do.....	do.....		12	47
	Asti, Teneriffe, Trontignan, Chiantiz, Ponino, in bottles of 1 liter.....	Dozen.....	Dozen.....		3 30	47
	Other kinds (not specified) in bottles of ½ liter.....	do.....	do.....		4 50	47
	The same, but of 1 liter.....	do.....	do.....		8 00	47
	Whisky:					
	In bottles of 1 liter (1.125 quarts).....	do.....	do.....		5 00	51
	In barrels.....	Liter.....	1.125 qts..		30	51
57	Starch.....	Kilo.....	2.2 lbs.....		11	43
58	Sugar, gross weight.....	100 kilo.....	220 lbs.....	8 00-10 20 to	13 40	30
	Molasse.....	Kilo.....	2.2 lbs.....		06	43
59	Tin.....	do.....	do.....		36	30½
60	Tobacco:					
	Leaf, (all kinds) gross weight.....	100 kilo.....	220 lbs.....	14 50 to	60 00	41
	Fine-cut tobacco (all kinds), gross weight.....	do.....	do.....	41 00 to	120 00	41
	Cigars, gross weight.....	Kilo.....	2.2 lbs.....	90 to	4 50	51
	Cigarettes, gross weight.....	do.....	do.....	1 00 to	2 50	51
61	Vegetables:					
	Potatoes, gross weight.....	100 kilo.....	220 lbs.....		4 50	12

Duties as collected under tariff law of Uruguay, &c.—Continued.

Number.	Tariff classification.	Weights, measures, or number.		Custom-house valuation, Montevidean gold.	Duty.
		Montevideo.	United States.		
61	Vegetables—Continued.				<i>Pr. ct.</i>
	Beans, gross weight.....	100 kilos ..	220 lbs	\$7 50	30½
	Other vegetables.....				30½
62	Wood:				
	Pine in general from ¾ to 1 inch thickness.....	100 sq.met.	1,000 sq. ft.	30 00	20
	Pickets, 1½ by 2½ inches, 1 yard 23 inches length.....	Thousand.	Thousand.	40 00	20
	Pickets (spruce), 1 by 3½ inches, 1 yard 23 inches length.....	do	do	15 00	20
	Walnut, ¾ to 1 inch thickness.....	100 sq.met.	1,000 sq. ft.	100 00	20
	Mahogany, ¾ to 1 inch thickness.....	do	do	160 00	20
	Ebony.....	100 kilo.....	220 lbs	14 00	20
	Planks and boards of hard wood, in general, ¾ to 1 inch thickness.....	100 sq.met.	1,000 sq. ft.	60 00	20
	Lumber, from Punta Arenas, ¾ to 1 inch thickness.....	do	do	40 00	20
	Pine board (dressed):				
	¾ to 1 inch thickness.....	do	do	40 00	30½
	¾ inch thickness.....	do	do	30 00	20
	¾ inch thickness.....	do	do	45 00	20
	Veneering in general, fine included ..	do	do	12 00	20
	Veneering, rosewood.....	100 kilo.....	220 lbs	8 00	20
	Beams of hard wood in general, 6½ by 6½ inches, up to 11½ by 11½ inches thickness.....	One.....	One.....	5 00	20
	Beams of hard wood in general, of over 11½ by 11½ inches thickness.....	do	do	10 00	20
	Logs of hard wood in general, 6½ by 6½ inches up to 11½ by 11½ inches thickness, length 2 yards 30 inches.....	do	do	2 00	20
	Logs of hard wood in general, of over 11½ by 11½ inches thickness; length 3 yards 30 inches.....	do	do	4 00	20
	Joists of hard wood in general, up to 4 by 10 inches thickness.....	do	do	1 50	20
	Masts of over 16 inches diameter in the middle.....	do	do	100 00	20
	Railroad ties, 5½ by 10 inches thickness; length 3 yards 10 inches.....	do	do	1 00	20
	All other kinds of wood.....		do		20
	Wood manufactures:				
	Sideboards, all kinds of wood.....	One.....	do	\$20 00 to 50 00	47
	Benches, all kinds of wood.....	do	do	1 00 to 4 00	47
	Book-stands, all kinds of wood.....	do	do	20 00 to 50 00	47
	Beds, all kinds of wood.....	do	do	15 00 to 40 00	47
	Bureaus, all kinds of wood.....	do	do	15 00 to 30 00	47
	Cradles.....	do	do	2 00 to 18 00	47
	Desks, all kinds of wood.....	do	do	10 00 to 40 00	47
	Sculptures, all kinds of wood.....	do	do	Val.at custom-house.	47
	Shelves, all kinds of wood.....	do	do	\$3 00 to 16 00	47
	Sets for bed-room (American).....	do	do	50 00 to 120 00	47
	Wash-stands.....	do	do	8 00 to 35 00	47
	Tables (dining-room, &c).....	do	do	2 00 to 30 00	47
	Clothes-racks.....	do	do	3 00 to 12 00	47
	Chairs, all kinds of wood.....	Dozen	Dozen	5 00 to 45 00	47
	Sofas.....	One.....	One.....	5 00 to 40 00	47
	All others.....				47
63	Wool (not in tariff).				
94	Zinc:				
	Sheets.....	100 kilo.....	220 lbs	10 50	20
	Ingots.....	do	2.2 lbs	09	20

UNITED STATES CONSULATE,
Montevideo, September 1, 1886.

The difference between the United States currency and that of Uruguay is so small that I have not attempted to reduce the valuation to the former, the value of the nominal current dollar of Uruguay being 103.52 cents, estimated in American gold dollars.

P. L. BRIDGERS,
United States Consul.

VENEZUELA.

This tariff is levied uniformly on the gross weight of packages. The value of the bolivar is equal to .1923 centimes in American gold. Forty-six kilos are equal to 100 pounds.

All foreign merchandise is divided into nine classes, on which duty is collected as follows:

First class.—Free.

Second class.—Ten centimes of a bolivar per kilo (.8769 cent. United States currency per 100 pounds).

Third class.—Twenty-five centimes of a bolivar per kilo (\$2.2115 United States currency per 100 pounds).

Fourth class.—Seventy-five centimes of a bolivar per kilo (\$6.6346 United States currency per 100 pounds).

Fifth class.—One bolivar and 25 centimes per kilo (\$11.0577 United States currency per 100 pounds).

Sixth class.—Two bolivars and 50 centimes per kilo (\$22.1154 United States currency per 100 pounds).

Seventh class.—Five bolivars per kilo (\$44.2308 United States currency per 100 pounds).

Eighth class.—Ten bolivars per kilo (\$88.4616 United States currency per 100 pounds).

Ninth class.—Twenty bolivars per kilo (\$176.9232 United States currency per 100 pounds).

Tariff of Venezuela on the products and manufactures of the United States.

[Prepared by Consul W. S. Bird.]

No.	Classification.	Class.
1	Agricultural implements	First.
2	Animals (live)	Do.
3	Art works:	
	Paintings and portraits on canvas, wood, paper, stone, or metal	Fifth.
	Monumental	First.
4	Bark and extracts:	
	Tan	Second.
	Sassafras	Fifth.
	Medicinal	Do.
	Extracts	Do.
5	Blacking	Fourth.
6	Bones:	
	Unmanufactured	Third.
	Manufactured	Sixth.
	Hoofs, unmanufactured	Third.
	Horns:	
	Unmanufactured	Do.
	Manufactured	Sixth.
7	Books:	
	Unbound or in rustic binding:	
	Blank	Fifth.
	Printed (treating of sciences, arts, or industries)	First.
	Catalogues, newspapers, and periodicals	Do.
	Copy, for elementary schools	Do.
	Pamphlets, volumes, and books for primary schools not above comprehended	Third.
	Bound:	
	Except those in the eighth class	Fourth.
	When bindings contain velvet, silk, mother-of-pearl, ivory, tortoise-shell, or gilt or plated ornaments	Eighth.
	Maps and globes	First.
	Sheet music	Second.
	Chromos and drawings	Fifth.
	Labels and circulars:	
	Printed or lithographed	Ninth.
	Blank	Fifth.
	Engraved or stamped paper	Do.
	Portfolios	Do.

Tariff of Venezuela, &c.—Continued.

No	Classification.	Class.
8	Brass :	
	Unmanufactured.....	Third.
	Manufactured (not specified).....	Fourth.
	Pencil and pen holders.....	Fifth.
	Bridle-bits, bells, hinges, stew-pans, saucepans, tacks, spoons, spurs, trays, trumpets, wire, stirrups.....	Fourth.
	Buttons, buckles, match-boxes, pins, thimbles.....	Sixth.
	Scales, balances, steelyards.....	Third.
9	Breadstuffs :	
	Bran, barley (in husk), corn, oats, rice (in grain), rye (in grain), wheat (in grain) ..	Second.
	Beans, potatoes, rice (ground) ..	Third.
	Barley (husked or ground), corn-starch, millet, macaroni, vermicelli, peanuts.....	Fourth.
	Crackers :	
	Sweet.....	Do.
	Plain.....	Third.
	Wheat flour.....	Do.
	Potato, corn, and rye flours.....	Fourth.
	Barley, bean, vermicelli, and other flours.....	Second.
10	Bricks.....	
11	Brooms :	
	Of vegetable material.....	Sixth.
	Of hair or bristles.....	Fifth.
	Brushes :	
	For animals, for floors, of horn or whalebone, carpenters'.....	Fourth.
	Tooth, hair, clothes, shoe, and other brushes.....	Fifth.
12	Candles :	
	Tallow.....	Fourth.
	Sperm, paraffine, stearine, or composition.....	Fifth.
13	Carriages :	
	Hearses, with appurtenances.....	Third.
	Carriages, calashes, omnibusses, phaetons, and others not specified.....	Second.
	Children's perambulators and velocipedes.....	Fourth.
	Wagons, carts, and wheelbarrows.....	Second.
	Wheels, coach, carriage, cart, &c.....	Do.
14	Cars: Railroad, steam, horse.....	First.
15	Chemicals, &c. :	
	Acids, stearic, oleic, acetic, nitric, muriatic.....	Third.
	Acid :	
	Sulphuric.....	Second.
	Tartaric (in powder).....	Fifth.
	Alum (crude), brimstone, carbon (animal), chromate of lead, carbonate of lead, chloride of lime, chalk (in powder), lampblack, mineral or effervescing waters, manganese, orange-flower water.....	Third.
	Ammonia (liquid), arsenic, carmine, cubebs, fish-glue, glycerine, gums (not specified), hair-dye, washes and tonics, inks, lozenges (gum), mace, poison (for curing skins), tannin, vanilla.....	Fifth.
	Aniseed, benne-seed, caraway-seed, bone-black, collodion, cummin-seed, glue (common), gelatine, incense, sulphate of lime (except in toys), marjoram, baking-powder, soap-stone, yeast.....	Fourth.
	Colza-seed, potassa (common, calcined, or nitrate), sulphate of copper, soda or barilla (common, calcined, or crystallized).....	Third.
	Dye-woods, fustic, Epsom and Glauber salts.....	Second.
	Herbs (medicinal), ink or toilet powders.....	Fifth.
	Lavender.....	Sixth.
	Perfumery, essences and extracts.....	Fifth.
	Chemicals not specified.....	Do.
	Drugs and medicines not specified.....	Do.
16	Clocks and watches :	
	Clocks (all kinds), chronometers, hour-glasses.....	Sixth.
	Watches and cases.....	Eighth.
	Watch or clock keys :	
	Gold or silver.....	Sixth.
	Not specified.....	Third.
	Regulators, springs, hands, and other interior machinery for watches and clocks.....	Sixth.
17	Coal.....	First.
	A special concession has been granted for importation of coal.	
18	Copper :	
	Old, unmanufactured, ore and rivets.....	Third.
	Boilers, harness buckles, chin straps, stoves, stew pans, sauce-pans, hinges, nails, tacks, padlocks, scales, steelyards, wire.....	Fourth.
	Sieves.....	Fifth.
	Shoe, hat, or clothing buckles.....	Sixth.
	Manufactured, not specified.....	Fourth.
19	Cotton manufactures :	
	Boat sails.....	Second.
	Cordage, blue hollands.....	Third.
	Heavy bands, bruza, canvas, duck, twine, mats, (1 meter long, 50 centimeters wide), furniture cloths, sails for vessels, lamp wicks, chair bottoms.....	Fourth.
	Arabias, white britannia, brown cottons, unbleached osnaburgs, regatta stripes (brown), cotonia (for cots), domestic (unbleached).....	Fifth.

Tariff of Venezuela, &c.—Continued.

No.	Classification.	Class.
19	Cotton manufactures—Continued.	
	Drill (unbleached), elefanto, linings, white blankets, gingham, thread (sewing), embroidery or knitting, white hollands, brown Irish cottons, unbleached drillings (white or colored), coarse gingham, bleached shirting, wide sheeting, sileisa (white or colored), white shirting, savajo (croydons), simpatico (shirting).	
	German cloth (white or colored), knit undershirts, knit bands, gowns (made or cut), knit caps, bombazine (white or colored), bordon (white or colored), colored brillantine, hammock cords, socks, stockings, calicones (colored), knit drawers and pants, carlancanes, table covers, bed spreads, coqui (white or colored), regatta stripes (bleached or colored), cretonas, hammocks, malvinas (colored), cloaks, coverings, damask (white or colored), undershirts, estripe, fustians (made or cut), razete (white or colored), bed quilts, parasols, knit work, cloth for undershirts (embroidered or not), chemisettes (made or cut), table cloths, nainsook, candle wick, towels, doylies, handkerchiefs, umbrellas, colored percales, piqué (white or colored), bustles, poplins, white cottons, colored calicoes, wadding.	Sixth.
	Fine bands, barege, porte monnaies, blondas, borlas, all cotton shirts, children's shirts (cut), crochet covers, zephyr (white or colored), girths, ribbons, gauze (white or colored), hangings, curtains, cravats, cord, corsets, jackets, creapo (colored), shawls, grenadines (white or colored), gloves, holan batista, victoria lawns, garters, insertions, laces, fringes, galloons, pillow slips, mosquito netting, velveteen, muslins and organdies (white or colored), scarfs, passamenteria, tulle crochet work, renque and tarletan (white or colored), strings, suspenders.	Seventh.
	Blouses, linen-bosom shirts, overcoats, children's shirts, capes, collars, petticoats, dotted shawls, holan batista or gauze (made into ruffs, ruches, caps, or other adornments), lazos, tulle (made up), cuffs, men's ready-made clothes, ruches (fine).	Eighth.
	Tafta, mantillas, pants, drawers, shirt-fronts, children's fine shirts	Do.
	Caps, dresses, women's ready-made clothing	Ninth.
20	Earthen, stone, and china ware:	
	Tiles, bricks	Second.
	Tobacco pipes, pottery, not specified	Third.
	Flower-pots, porcelain, chinaware, and imitations	Fourth.
	Toys, images, inkstands, paper-weights	Fifth.
21	Fertilizers, guano	First.
22	Fish, salt or smoked, sardines	Third.
23	Flax, hemp, and jute manufactures:	
	Hemp	Second.
	Flax, bagging, fishing-tackle	Third.
	Bags, canvas, pack-thread, shoe-thread	Fourth.
	Arabias, checks, domestic, sheeting, bramant (unbleached), Irish linen (unbleached), ticking (unbleached), thread, bramant (bleached), britannias, damask, counterpanes, table-cloths, drill, towels, hammocks, rouen linen, poplins, umbrellas, bleached Irish linen, bleached ticking.	Sixth.
	Braid, belts, curtains, cravats, cord, fancy trimmings, fringes, fustians, girths, gloves, galloons, lace, mosquito-netting, muslins, pillow-cases, petticoats, ribbons, tassels.	Seventh.
	Cloaks, cambric, collars, cuffs, cloths, gauze, handkerchiefs, lawns, night-caps, ruffles, shirts, shirt-bosoms, shawls.	Eighth.
24	Fruits:	
	Fresh (not specified), apples, pears, and fresh grapes	Second.
	Dried, or in liquor or sirup, chestnuts, cherries (dried), dates (dried), filberts, olives, raisins, sirups.	Fourth.
25	Furs, for hats	Do.
26	Glass manufactures:	
	Bottles (common) demijohns	Second.
	Flat, unsilvered	Third.
	Flat, unspecified, alembics, cruet, candlesticks, flower-stands, globes, lamp-chimneys, lamps, lanterns, levels, siphons, manufactured (not specified).	Fourth.
	Alcoholometers, areometers, liquid measures, cameras, cupping glasses, mirrors, images, inkstands, paper-weights, retorts, nursing bottles, plain stereoscopes.	Fifth.
	Binoculars and eye-glasses (not specified), barometers, beads, artificial eyes, hydrometers, thermometers, hour glasses, microscopes, jet imitations, spangles, spectacles, and telescopes, not containing gold or silver.	Sixth.
	Binoculars, eye-glasses, spectacles, stereoscopes, and telescopes, gold or silver mounted.	Eighth.
27	Glucose, importation prohibited.	
28	Glue:	
	Common	Fourth.
	Fish	Fifth.
29	Gunpowder (imported under special permit):	
	Gunpowder	Seventh.
	Fuses	Third.
	Dynamite and gun caps	Sixth.
30	Hair:	
	Goat-hair	Third.
	Horse-hair and hair for hats	Fourth.
	Bristles	Fifth.
	Human and imitations	Eighth.
31	Hay	Second.

Tariff of Venezuela, &c.—Continued.

No.	Classification.	Class.
32	Hides and skins:	
	Untanned and sole leather	Fourth.
	Parchment and imitations	Fifth.
	Tanned and manufactured patent leather and tanned sheep-skins	Sixth.
33	Honey (importation prohibited).	
34	Hops	Fourth.
35	Ice	First.
36	India-rubber manufactures:	
	Pipes, conduits, machinery bands	Fourth.
	Erasers, pen and pencil holders	Fifth.
	Boots, shoes, cloaks, combs, elastic for shoes, manufactured (not specified)	Sixth.
37	Iron and steel manufactures:	
	Machinery for making and distributing gas, for sugar mills and accessories, agriculture, mining, weaving, saw-mills, founderies, and arts and trades (not specified), printing-presses, type and accessories, fish-hooks, fire-engines.	First.
	Bridges, with accessories, for public use or agricultural enterprise, plows, harrows, hoes, axes, shovels, pickaxes, machetas, bill-hooks, pruning-knives, and other farm tools.	Do.
	Iron (unmanufactured), round, square, bar, plate, sheet, and other forms, boat and launch anchors, hoops, pipes, pumps.	Second.
	Iron articles for domestic use, anchors for ships, adzes, anvils, balusters, balconies, boilers, busts, cannon, wire cloth, columns, flower-pots, forges, furniture, fry-pans, hatchets, jacks, kitchen ranges, kettles, mortars, nails, ore, pots, posts, rivets, scales, chains for vessels, iron edifices (in pieces), roofing, steelyards, stew-pans, statues, stoves, sieves, tacks, urns.	Third.
	Iron (manufactured, not specified), awls, augers, bridle bits, bells, bolts, curry-combs, compasses, chisels, helmet straps, drills, files, girandoles, hinges, hammers, locks, lanterns, lamps, levels.	Fourth.
	Meat-covers, pincers, padlocks, spoons, instruments for arts and trades, ordinary knives for fishermen, shoemakers, saddlers, gardeners, tobaccoconists, hunters, &c., spurs, stirrups, saws, trays, trowels.	Do.
	Frames for glasses, filings, images, inkstands, jack-knives, pocket-knives and forks, paper-knives, paper-weights, razors, scissors, instruments (surgical, anatomical, dental, mathematical, and other scientific), musical instruments and parts (not specified).	Fifth.
	Iron articles, gilt or plated, buckles, gun-nipples, hairpins, needles, thimbles.	Sixth.
	Carbines, muskets, pistols, swords, sabers, sword-blades, guns-locks, gridirons, window-grating, fine hunting knives, poinards.	Seventh.
	Steel:	
	Unmanufactured	Third.
	Manufactured (not specified)	Fourth.
	For crinolines, bustles, &c.	Sixth.
	Iron wire:	
	Galvanized (unmanufactured)	Second.
	Ungalvanized	Third.
	Steel wire, manufactured (not specified)	Fourth.
	Machinery:	
	(Not specified) weighing more than 1,000 kilograms	Second.
	(Not specified) weighing less than 1,000 kilograms	Third.
	For making effervescing waters	Fourth.
38	Jewelry:	
	Gold and silver, precious stones, watch, jewelry, and card cases	Eighth.
	Imitation jewelry	Sixth.
39	Lamps, chimneys, shades, wicks, globes, lamps	Fourth.
40	Lead manufactures:	
	In pies, bars, &c., unmanufactured, shot, ball	Third.
	Manufactured (not specified) solder	Fourth.
	Toys	Fifth.
41	Leather manufactures:	
	Harness:	
	For coaches and vehicles, not specified	Second.
	For hearses, carts, wagons, holsters	Third.
	Bags, hat boxes, strings, trunks, measures	Fifth.
	Whips, porte monnaies	Sixth.
	Girths, headstalls, reins, saddles, shot pouches, scabbards, patent leather manufactures.	Seventh.
	Gloves	Eighth.
	Boots and shoes	Ninth.
42	Lime and cement:	
	Cement	First.
	Lime, quick or slacked	Second.
	Sulphate of lime (except in toys)	Fourth.
43	Malt liquors:	
	Beer	Third.
	Condensed beer	Fifth.
44	Medical instruments	Do.
45	Naval stores:	
	Rosin, tar, pitch	Second.
	Turpentine	Third.
	Rosin for musical instruments	Fifth.
46	Oil cake and meal (not classed).	

Tariff of Venezuela, &c.—Continued.

No.	Classification.	Class.
47	Oils:	
	Animal:	
	Bone.....	Third.
	Fish.....	Fourth.
	Cod-liver.....	Fifth.
	Mineral, kerosene.....	Third.
	Vegetable:	
	Sesame, colza, olive.....	Do.
	Almond, linseed, palm, drying.....	Fourth.
	Beneseed, castor, perfumed, and others, not specified.....	Fifth.
48	Paraffine and wax:	
	Stearine (unmanufactured), shoemaker's wax.....	Third.
	Crude paraffine, spermaceti, black, yellow, and vegetable wax.....	Fourth.
	White wax (pure or unmixed).....	Fifth.
	Manufactured wax (except in toys).....	Sixth.
49	Paints:	
	Common oil, black lead, red lead, chromate of lead, lampblack.....	Third.
	Ochre.....	Second.
	Paints, not specified.....	Fifth.
50	Paper:	
	White printing, ungummed.....	First.
	Cigarette.....	Second.
	Writing paper, brown, and others, not specified, sand paper.....	Third.
	Painted wall.....	Fourth.
	Manufactured, not specified.....	Fifth.
	Gilt or silvered, stamped in relief or flowered.....	Sixth.
	Envelopes.....	Ninth.
51	Plated ware: Bells, bridle trimmings, castors, cruets, chandeliers, candle sticks, curb-chains, spoons, ladles, stirrups, spurs, trays, trumpets, iron ware, knives, forks, lamps, venders, wire.	Sixth.
52	Provisions:	
	Fresh meats (not classed).	
	Jerked or dried meats.....	Second.
	Hams, tongues, smoked, salt or pickled, salted or smoked, not specified.....	Third.
	Hams in tins, sausages.....	Fourth.
	Oleomargarine (not classed).	
	Lard and butter.....	Third.
	Cheese, soap grease.....	Fourth.
53	Quicksilver.....	Fifth.
54	Seeds: Not medicinal (for planting).....	First.
55	Soap: Common, castile, perfumed.....	Fifth.
56	Spirits:	
	Cane rum (importation prohibited), red Bordeaux wine; all wines except Spanish in pipes, kegs or barrels.....	Third.
	All wines except Spanish and Bordeaux in demijohns and bottles.....	Fourth.
	Liquors (sweet) not specified.....	Fifth.
	Spanish wine.....	Sixth.
	Brandy, gin, spirits of wine, and all liquors to 22° Cartier's scale.....	Seventh.
57	Starch: Importation prohibited.	
58	Sugar: Sugars and molasses (importation prohibited).	
59	Tin:	
	Pure or alloyed, unmanufactured, and tinned basins.....	Third.
	Manufactured (not specified).....	Fourth.
	Eyelets, hooks and eyes.....	Sixth.
60	Tobacco:	
	Chewing (importation prohibited).	
	Cigarette and prepared for cigars.....	Fourth.
	Leaf and manufactured cigarettes.....	Seventh.
	Manufactured, not specified.....	Eighth.
61	Vegetables:	
	Pickled in vinegar or brine, beans, potatoes, onions.....	Third.
	Preserved, condiments, garlic.....	Fourth.
62	Wood manufactures:	
	Sticks for matches (importation prohibited).	
	Prepared for naval construction, hewed pieces of pine, oak, &c., for sawing into boards, &c.	First.
	Common, such as boards, beams and scantling of pine, unplanned and unjoined, boats, launches, shingles, deals, hoops.	Second.
	Sawed, planed or joined, fine for musical instruments and cabinet work, veneers, barrels, pipes or hogsheds, set up or in parts, staves, blinds for doors and windows.	Third.
	Manufactured (not specified) billiard and bagatelle tables with accessories, boxes, chairs, piano stools, carpenters' chests, planes, saddle-trees, furniture (common) of wood, cane or straw.	Fourth.
	Bows for musical instruments, drums, trunks, sashes, moldings, battens.....	Fifth.
	Furniture, upholstered or of fine woods, such as rosewood, mahogany, walnut, &c., roulette tables with accessories.	Fifth.
	Walking canes.....	Sixth.
63	Wool:	
	Blankets.....	Fifth.
	Wool, manufactured.....	Fourth.
	Counterpanes, umbrellas.....	Sixth.

Tariff of Venezuela, &c.—Continued.

No.	Classification.	Class.
63	Wool—Continued. Alpaca, braid, belts, caps, cravats, cassimere, casinet, cambrou, cord, damask, epanettes, fancy trimmings, fringes, gloves, galloons lace, nubias, ribbons, stocks, socks, saddle-cloths, shawls, serge, tassels, table-cloths, undershirts. Curtains, hangings, shirts, shawls and table-cloths with silk border or trimmings Adornments and clothing for women and children, cloaks, paletots, overcoats, ready-made clothes.	Seventh. Eighth. Ninth.
64	Zinc: Unmanufactured and zinc white Wire and manufactured not specified	Third. Fourth.

HAWAIIAN ISLANDS.

Tariff of the Hawaiian Islands.

[Report of Consul-General Putnam.]

Number.	Tariff classification.	Duty.	Equivalent in United States money.
1	Agricultural implements.....	Free.....	
2	Animals: Cattle, hogs, horses, mules, sheep, and all other.....	do.....	
3	Art works:		
	Prints, &c., on paper.....	do.....	
	All other.....	10 per cent.....	
4	Barks and extracts.....	do.....	
5	Blacking.....	do.....	
6	Bones, hoops, horns, &c.....	do.....	
7	Books, maps, and engravings.....	Free.....	
8	Brass, and manufactures of.....	10 per cent.....	
9	Breadstuffs: Barley, bread and biscuits, Indian corn, oats, rye, wheat, and flour.....	Free.....	
10	Bricks.....	do.....	
11	Brooms and brushes.....	do.....	
12	Candles.....	do.....	
13	Carriages.....	10 per cent.....	
	Horse-cars.....	Free.....	
14	Cars, railroad and steam.....	do.....	
15	Chemicals.....	10 per cent.....	
16	Clocks:		
	If without glass front.....	Free.....	
	With glass front.....	10 per cent.....	
	Watches.....	do.....	
17	Coal.....	Free.....	
18	Copper, ore, ingots, bars and sheet.....	do.....	
19	Cotton and manufactures.....	do.....	
20	Earthen, stone, and china ware.....	10 per cent.....	
21	Fertilizers.....	Free.....	
22	Fish.....	do.....	
23	Flax, hemp, and jute, and manufactures.....	do.....	
24	Fruits, preserved.....	do.....	
25	Furs.....	Free.....	
26	Glass and manufactures.....	10 per cent.....	
27	Glucose.....	Free.....	
28	Glue.....	do.....	
29	Gunpowder.....	10 per cent.....	
30	Hair.....	do.....	
31	Hay.....	Free.....	
32	Hides and skins.....	do.....	
33	Honey.....	do.....	
34	Hops.....	do.....	
35	Ice.....	do.....	
36	India-rubber manufactures.....	10 per cent.....	
	Boots and shoes.....	Free.....	
37	Iron and steel manufactures.....	do.....	
38	Jewelry.....	10 per cent.....	
39	Lamps.....	do.....	
40	Lead manufactures.....	do.....	
41	Leather manufactures.....	Free.....	
42	Lime and cement.....	do.....	
43	Malt liquors:		
	Per dozen pints.....	20 cents.....	\$0 20
	Per dozen quarts.....	40 cents.....	40
	In bulk, per gallon.....	15 cents.....	15
44	Medical instruments.....	10 per cent.....	
45	Naval stores, rosin, tar, turpentine and pitch.....	Free.....	
46	Oil cake and meal.....	do.....	
47	Oils, animal, vegetable, and mineral.....	do.....	
48	Paraffine and wax.....	10 per cent.....	
49	Paints.....	do.....	
50	Paper manufactures.....	Free.....	
51	Plated ware.....	10 per cent.....	
52	Provisions, meats, fresh and salt, oleomargarine, lard, butter, and cheese.....	Free.....	

Tariff of the Hawaiian Islands—Continued.

Number.	Tariff classification.	Duty.	Equivalent in United States money.
53	Quicksilver	10 per cent.....	.....
54	Seeds	Free .....	.....
55	Soap	do .....	.....
56	Spirits:		
	Alcohol and others of same strength, per gallon	\$10.....	\$10 00
	Alcohol for mechanical and scientific purposes, per gallon	50 cents.....	50
	Brandies, whiskies, &c.:		
	35 to 55 per cent. proof, per gallon.....	\$3.....	3 00
	Above 55 per cent.....	Proportionately .....	.....
	Wines:		
	Madeira, port, &c., above 18 and below 30 per cent. alcoholic strength, per gallon	\$2.....	2 00
	Champagne, Moselle, Hock:		
	Per dozen quarts.....	\$3.....	3 00
	Per dozen pints	\$1 50.....	1 50
	Claret, Rhine wine, and other light wines below 18 per cent. alcoholic strength:		
	Per dozen quarts.....	40 cents.....	40
	Per dozen pints	20 cents.....	20
	In bulk, per gallon.....	15 cents.....	15
57	Starch.....	Free .....	.....
58	Sugar and molasses	Free .....	.....
59	Tin.....	10 per cent.....	.....
60	Tobacco, leaf, cigars, and cigarettes	Free .....	.....
61	Vegetables .....	.....	.....
62	Wood manufactures (except furniture upholstered or carved and carriages).	Free .....	.....
63	Wool.....	Free .....	.....
64	Zinc.....	10 per cent.....	.....

The full tariff of the Hawaiian Islands was printed in Consular Reports No. 26½, p. 550.

ASIA.

CHINA.

Table showing tariff classification and rates of duty of China.

[Prepared by Consul-General Kennedy.]

Number.	Tariff classification.	Tariff rates of duty.	Equivalent in United States money.	Unit.
		<i>t. m. c.*</i>		
1	Agricultural implements: If for sale, 5 per cent. ad valorem. If for private use	Free.		
2	Animals: Cattle, hogs, horses, mules, sheep, and all others.	Free.		
3	Art works, if for sale, 5 per cent. ad valorem.			
4	Bark and extracts: Mangrove bark	0. 0. 3. 0	\$0 04	133½ pounds avoirdupois.
	Other bark and extracts, 5 per cent. ad valorem.			
5	Blacking, if for sale, 5 per cent. ad valorem.			
6	Bones, hoofs, horns, &c.: Bones: Tiger's	1. 5. 5. 0	2 02	133½ pounds.
	Other, 5 per cent. ad valorem.			
	Hoofs, 5 per cent. ad valorem.			
	Horns: Buffalo and cow	0. 2. 5. 0	33	133½ pounds.
	Deer	0. 2. 5. 0	33	Do.
	Rhinoceros	2. 0. 0. 0	2 60	Do.
7	Books, maps, engravings, &c.: Engravings, i. e., works of art, if for sale, 5 per cent. ad valorem.			
8	Brass and manufacturers of: Bars	1. 0. 0. 0	1 30	133½ pounds.
	Sheets, 5 per cent. ad valorem.			
	Ware	1. 0. 0. 0	1 30	133½ pounds.
	Foil	1. 5. 0. 0	1 95	Do.
	Wire	1. 1. 5. 0	1 50	Do.
	Buttons	0. 0. 5. 5	07	Do.
9	Breadstuffs: Barley	0. 1. 0. 0	13	Do.
	Bread and biscuits	Free.		
	Indian corn and oats	Free.		
	Rye and wheat	0. 1. 0. 0	13	Do.
	Flour	Free.		
10	Bricks.			
11	Brooms and brushes, if for sale, 5 per cent. ad valorem.			
12	Candles	Free.		
13	Carriages and horse-cars, if for sale, 5 per cent. ad valorem.			
14	Cars (railroad, steam), if for sale, 5 per cent. ad valorem.			
15	Chemicals, if for sale, 5 per cent. ad valorem.			
16	Clocks and watches: Clocks, 5 per cent. ad valorem	1. 0. 0. 0	†1 30	
	Watches (option)	0. 0. 5. 0	07	Ton.
17	Coal			
18	Copper: Rods, nails	1. 5. 0. 0	1 95	133½ pounds.
	Ore	0. 5. 0. 0	65	Do.
	Ingots, bar	1. 0. 0. 0	1 30	Do.
	Sheet	1. 5. 0. 0	1 95	Do.
19	Cotton	0. 3. 5. 0	46	Do.

* 10 candarins = 1 mace; 10 mace = 1 tael.
† Or 5 per cent. ad valorem.

Table showing tariff classification and rates of duty of China—Continued.

Number.	Tariff classification.	Tariff rates of duty.	Equivalent in United States money.	Unit.
19	Cotton—Continued.			
	Manufactures:			
	Gray, white, plain, and twilled:	<i>t. m. c.</i>		
	Exceeding 34 inches wide and not exceeding 40 yards long.	0.0.8.0	\$0 11	Piece.
	Exceeding 34 inches wide and exceeding 40 yards long.	0.0.2.0	03	10 yards.
	Drills and jeans:			
	Not exceeding 30 inches wide and not exceeding 40 yards long.	0.1.0.0	13	Piece.
	Not exceeding 30 inches wide and not exceeding 30 yards long.	0.0.7.5	10	Do.
	T-cloths:			
	Not exceeding 34 inches wide and not exceeding 48 yards long.	0.0.8.0	11	Do.
	Not exceeding 34 inches wide and not exceeding 24 yards long.	0.0.4.0	06	Do.
	Dyed, figured, and plain, not exceeding 36 inches wide and not exceeding 40 yards long.	0.1.5.0	19	Do.
	Fancy, white brocades, and white spotted shirtings, not exceeding 30 inches wide and not exceeding 40 yards long.	0.1.0.0	13	Do.
	Printed chintzes and furnitures, not exceeding 31 inches wide and not exceeding 30 yards long.	0.0.7.0	09	Do.
	Cambrics:			
	Not exceeding 46 inches wide and not exceeding 24 yards long.	0.0.7.0	09	Do.
	Not exceeding 46 inches wide and not exceeding 12 yards long.	0.0.3.5	04	Do.
	Muslins:			
	Not exceeding 46 inches wide and not exceeding 24 yards long.	0.0.7.5	10	Do.
	Not exceeding 46 inches wide and not exceeding 12 yards long.	0.0.3.5	04	Do.
	Damasks, not exceeding 36 inches wide and not exceeding 40 yards long.	0.2.0.0	26	Do.
	Dimities or quilting, not exceeding 40 inches wide and not exceeding 12 yards long.	0.0.6.5	08	Do.
	Ginghams, not exceeding 28 inches wide and not exceeding 30 yards long.	0.0.3.5	04	Do.
	Handkerchiefs, not exceeding 1 yard square.	0.0.2.5	03	Dozen.
	Fustians, not exceeding 35 yards long.	0.2.0.0	26	Piece.
	Velveteens, not exceeding 34 yards long.	0.1.5.0	20	Do.
	Thread.	0.7.2.0	94	133 pounds.
	Yarn.	0.7.0.0	91	Do.
20	Earthen, stone, and china ware:			
	Earthenware.	0.0.5.0	07	Do.
	China ware:			
	Fine.	0.9.0.0	1 17	Do.
	Coarse.	0.4.5.0	59	Do.
21	Fertilizers, 5 per cent. ad valorem.			
22	Fish:			
	Salt fish.	0.1.8.0	23	Do.
	Finned.	Free.		
23	Flax, hemp, and jute:			
	Flax, 5 per cent. ad valorem.			
	Hemp.	0.3.5.0	46	Do.
	Jute.	0.2.0.0	26	Do.
	Manufactures, 5 per cent. ad valorem.			
24	Fruits, preserved.	Free.		
25	Furs (skins):			
	Fox, large.	0.1.5.0	20	Each.
	Fox, small.	0.0.7.5	98	Do.
	Marten.	0.1.5.0	20	Do.
	Sea-otter.	1.5.0.0	1 95	Do.
	Tiger and leopard.	0.1.5.0	20	Do.
	Beaver.			Hundred.
	Doe, hare, and rabbit.	0.5.0.0	65	Do.
	Squirrel and ermine.	0.5.0.0	65	Do.
	Land otter.	2.0.0.0	2 60	Do.
	Raccoon.	2.0.0.0	2 60	Do.
26	Glass.	0.1.5.0	20	Box of 100 square feet.
	Manufactures.	Free.		
27	Glucose, 5 per cent. ad valorem.			
28	Glue.	0.1.5.0	20	133 pounds.
29	Gunpowder, contraband.			

Table showing tariff classification and rates of duty of China—Continued.

Number.	Tariff classification.	Tariff rates of duty.	Equivalent in United States money.	Unit.
30	Hair:	<i>t. m. c.</i>		
	Camels'	1 0 0 0	\$1 30	133 pounds.
	Goats'	0 1 8 0	23	Do.
	Horse, 5 per cent. ad valorem.			
31	Hay	Free.		
32	Hides and skins:			
	Buffalo and cow	0 5 0 0	65	Do.
	Rhinoceros	0 4 2 0	55	Do.
33	Honey	0 9 0 0	1 17	Do.
34	Hops	Free.		
35	Ice	Free.		
36	India-rubber and manufactures:			
	Boots	Free.		
	Shoes	Free.		
37	Iron and steel:			
	Iron:			
	Pigs	0 0 7 5	10	Do.
	Sheets, rods, bars	0 1 2 5	16	Do.
	Hoops (new)	0 1 2 5	16	Do.
	Wire	0 2 5 0	33	Do.
	Manufactures, like nails, tacks, rivets, &c., 5 per cent. ad valorem.			
	Steel:			
	Bars and ingots	0 2 5 0	33	133½ pounds.
	Manufactures, 5 per cent. ad valorem.			
38	Jewelry	Free.		
39	Lamps, 5 per cent. ad valorem.			
40	Lead:			
	Pigs	0 2 5 0	33	Do.
	Sheets	0 5 5 0	72	Do.
	Manufactures 5 per cent. ad valorem.			
41	Leather:			
	Goat and sheep, 5 per cent. ad valorem.			
	Cow	0 4 2 0	55	Do.
	Manufactures:			
	Boots and shoes	Free.		
	Leather articles	1 5 0 0	1 95	
42	Lime and cement, 5 per cent. ad valorem.			
43	Malt liquors	Free.		
44	Medical instruments	Free.		
45	Naval stores, 5 per cent. ad valorem.			
	Rosin, 5 per cent. ad valorem.			
	Tar, 5 per cent. ad valorem.			
	Turpentine and pitch, 5 per cent. ad valorem.			
46	Oil cake and meal, not imported.			
47	Oils:			
	Animal, 5 per cent. ad valorem.			
	Mineral, 5 per cent. ad valorem.			
	Vegetable	0 3 0 0	39	133½ pounds.
48	Paraffine and wax:			
	Paraffine, 5 per cent. ad valorem.			
	Beeswax	1 0 0 0	39	Do.
49	Paints, 5 per cent. ad valorem.			
50	Paper:			
	Wall and printing paper:			
	If for sale, 5 per cent. ad valorem.			
	Otherwise	Free.		
	Manufactures, 5 per cent. ad valorem.			
	Stationery, generally	Free.		
51	Plated ware	Free.		
52	Provisions:			
	Hams	0 5 5 0	72	Do.
	Meats, fresh, salt	Free.		
	Oleomargarine, lard, butter, and cheese	Free.		
53	Quicksilver	2 0 0 0	2 60	Do.
54	Seeds	Free.		
55	Soaps	Free.		
56	Spirits	Free.		
57	Starch, 5 per cent. ad valorem.			
58	Sugar:			
	Dutch standard in use:			
	White	0 2 0 0	26	Do.
	Brown	0 1 2 0	16	Do.
	Molasses, 5 per cent. ad valorem.			
59	Tin:			
	Slabs	1 2 5 0	1 63	Do.
	Plates	0 4 0 0	52	Do.
60	Tobacco, leaf cigars and cigarettes	Free.		
61	Vegetables	Free.		

Table showing tariff classification and rates of duty of China—Continued.

Number.	Tariff classification.	Tariff rates of duty.	Equivalent in United States money.	Unit.
62	Wood:			
	Masts and spars:			
	Hard wood:	<i>t. m. c.</i>		
	Not exceeding 40 feet.....	4. 0. 0. 0	\$5 20	Each.
	Not exceeding 60 feet.....	6. 0. 0. 0	7 80	Do.
	Exceeding 60 feet.....	10. 0. 0. 0	13 00	Do.
	Soft wood:			
	Not exceeding 40 feet.....	2. 0. 0. 0	2 60	Do.
	Not exceeding 60 feet.....	4. 5. 0. 0	5 85	Do.
	Exceeding 60 feet.....	6. 5. 0. 0	8 45	Do.
	Beams, hard wood, not exceeding 26 feet long and under 12 inches square.	0. 1. 5. 0	20	Do.
	Planks:			
	Hard wood:			
	Not exceeding 24 feet long, 12 inches wide, and 3 inches thick.	3. 5. 0. 0	4 55	Hundred.
	Not exceeding 16 feet long, 12 inches wide, and 3 inches thick.	2. 0. 0. 0	2 60	Do.
	Soft wood.....	0. 7. 0. 0	91	1,000 square feet.
	Teak.....	0. 0. 3. 5	05	Cubic feet.
	Camagon.....	0. 0. 3. 0	04	133 pounds.
	Ebony.....	0. 1. 5. 0	20	Do.
	Garroo.....	2. 0. 0. 0	2 60	Do.
	Fragrant.....	0. 4. 5. 0	59	Do.
	Kraujee, 35 feet long, 1 foot 8 inches wide, 1 foot thick.	0. 8. 0. 0	1 04	Each.
	Laka.....	0. 1. 4. 5	19	133 pounds.
	Red.....	0. 1. 1. 5	15	Do.
	Manufactures, 5 per cent. ad valorem.			
63	Wool.....	0. 3. 5. 0	46	Do.
64	Zinc, 5 per cent. ad valorem.			

NOTE.—The tael (1 ounce silver) is the Haikwan or customs tael, and has been considered as worth \$1.30 United States currency; a picul=100 catties=133½ pounds avoirdupois.

The full tariff of China was printed in Consular Reports No. 36, p. 384.

COREA.

[Compared by Consul-General Parker.]

No.	Classification.	Duty.
1	Agricultural implements	Free.
2	Animals:	
	Cattle, hogs, horses, mules, sheep, and all others	5 per cent.
3	Art works	20 per cent.
4	Bark and extracts	5 per cent.
5	Blacking	10 per cent.
6	Bones, hoofs, horns, &c	5 per cent.
7	Books, maps, &c	Free.
	Engravings	10 per cent.
8	Brass, and manufactures of	7½ per cent.
9	Breadstuffs:	
	Barley	5 per cent.
	Bread and biscuits	7½ per cent.
	Indian corn	5 per cent.
	Oats	Do.
	Rye	Do.
	Wheat	Do.
	Flour	7½ per cent.
10	Bricks	5 per cent.
11	Brooms and brushes	10 per cent.
12	Candles	7½ per cent.
13	Carriages	20 per cent.
	Horse-cars	7½ per cent.
14	Cars (railroad, steam)	Do.
15	Chemicals	Do.
16	Clocks	10 per cent.
	Gold watches	20 per cent.
	Other watches	10 per cent.
17	Coal	5 per cent.
18	Copper, ore, ingots, bar, and sheet	Do.
19	Cotton	Do.
	Manufactures	7½ per cent.
20	Earthenware	Do.
	Common:	
	Stone and china ware	Do.
	Superior	10 per cent.
21	Fertilizers	5 per cent.
22	Fish:	
	Fresh	Do.
	Dried	7½ per cent.
23	Flax, hemp, and jute	5 per cent.
	Manufactures	7½ per cent.
24	Fruits:	
	Fresh	5 per cent.
	Preserved	7½ per cent.
25	Furs	20 per cent.
26	Glass:	
	Window	7½ per cent.
	Plate	10 per cent.
	Manufactures	Do.
27	Glucose	7½ per cent.
28	Glue	5 per cent.
29	Gunpowder, under special license	20 per cent.
30	Human hair	10 per cent.
	Other kinds	7½ per cent.
31	Hay	5 per cent.
32	Hides and skins:	
	Raw	Do.
	Tanned	7½ per cent.
33	Honey	5 per cent.
34	Hops	7½ per cent.
35	Ice	5 per cent.
36	India-rubber manufactures	10 per cent.
37	Iron (pig)	5 per cent.
	Steel	7½ per cent.
	Manufactures	Do.
38	Jewelry	20 per cent.
39	Lamps	7½ per cent.
40	Lead:	
	Pig	5 per cent.
	Manufactures	7½ per cent.

No.	Classification.	Duty.
41	Leather	7½ per cent.
	Manufactures	10 per cent.
42	Lime	5 per cent.
	Cement	7½ per cent.
43	Malt liquors	10 per cent.
44	Medical instruments	Free.
45	Naval stores:	
	Rosin	7½ per cent.
	Tar	5 per cent.
	Turpentine	7½ per cent.
	Pitch	5 per cent.
46	Oil cake and meal	Do.
47	Oils:	
	Animal	7½ per cent.
	Mineral	5 per cent.
	Vegetable	7½ per cent.
48	Paraffine and wax	Do.
49	Paints	Do.
50	Paper, common	5 per cent.
	Fancy, wall, &c	10 per cent.
	Manufactures	Do.
51	Plated ware	Do.
52	Provisions:	
	Meats:	
	Fresh	5 per cent.
	Salt	7½ per cent.
	Oleomargarine	Do.
	Lard	Do.
	Butter	Do.
	Cheese	Do.
53	Quicksilver	Do.
54	Seeds	5 per cent.
55	Soap:	
	Common	Do.
	Superior	10 per cent.
56	Spirits	20 per cent.
57	Starch	7½ per cent.
58	Sugar	Do.
	Molasses	Do.
59	Tin	Do.
60	Tobacco, leaf, cigars, and cigarettes	20 per cent.
61	Vegetables	5 per cent.
62	Wood:	
	Hard	10 per cent.
	Soft	7½ per cent.
	Manufactures	Do.
63	Wool	5 per cent.
64	Zinc	Do.

NOTE.—All import duties in Corea are ad valorem.

The full tariff of Corea was printed in Consular Reports No. 40, p. 341.

JAPAN.

The full tariff of Japan was printed in Consular Reports No. 22, p. 636.

SIAM.

Consul-General Jacob O. Child writes from Bangkok:

The treaty of 1856 between the United States and Siam regulates the tariff and fixes it at a uniform rate of 3 per cent. on the market value of goods, payable either in kind or in money, at the option of the importer.

INDIA.

Tariff of British India on products and manufactures of the United States.

[Prepared by Consul Bonham.]

No.	Tariff classification.	Duty in Indian currency.		Equivalent in United States money.	
		Unit.	Duty.	Unit.	Duty.
1	Agricultural implements		Free.		
2	Animals, cattle, hogs, horses, mules, sheep, and all others		Free.		
3	Art works		Free.		
4	Bark and extracts		Free.		
5	Blacking		Free.		
6	Bones, hoofs, horns, &c.		Free.		
7	Books, maps, engravings, &c.		Free.		
8	Brass, and manufactures of		Free.		
9	Breadstuffs, barley, bread and biscuits, Indian corn, oats, rye, wheat, flour		Free.		
10	Bricks		Free.		
11	Brooms and brushes		Free.		
12	Candles		Free.		
13	Carriages and horse-cars		Free.		
14	Cars (railroad, steam)		Free.		
15	Chemicals		Free.		
16	Clocks and watches		Free.		
17	Coal		Free.		
18	Copper, ore, ingots, bar, sheet		Free.		
19	Cotton, and manufactures		Free.		
20	Earthen, stone, and China ware		Free.		
21	Fertilizers		Free.		
22	Fish		Free.		
23	Flax, hemp, and jute, and manufactures		Free.		
24	Fruits, preserved		Free.		
25	Furs		Free.		
26	Glass manufactures		Free.		
27	Glucose		Free.		
28	Glue		Free.		
29	Gunpowder, 10 per cent. ad valorem.				
30	Hair		Free.		
31	Hay		Free.		
32	Hides and skins		Free.		
33	Honey		Free.		
34	Hops		Free.		
35	Ice		Free.		
36	India-rubber manufactures		Free.		
37	Iron and steel, and manufactures		Free.		
38	Jewelry		Free.		
39	Lamps		Free.		
40	Lead, and manufactures		Free.		
41	Leather, and manufactures		Free.		
42	Lime and cement		Free.		
43	Malt liquor (see note)	Imp. gal.	1 anna ..	Imp. gall.	\$2 39
44	Medical instruments		Free.		
45	Naval stores—rosin, tar, turpentine, and pitch		Free.		
46	Oil cake and meal		Free.		
47	Oils, animal, minerals, and vegetable		Free.		
48	Paraffine and wax		Free.		
49	Paints		Free.		
50	Paper and manufactures		Free.		
51	Plated ware		Free.		
52	Provisions, meats, fresh, salt, oleomargarine, lard, butter, cheese		Free.		
53	Quicksilver		Free.		
54	Seeds		Free.		
55	Soaps		Free.		
56	Spirits (see note)	Imp. gal.		Imp. gall.	1 43
57	Starch		Free.		
58	Sugar, molasses		Free.		
59	Tin		Free.		
60	Tobacco (leaf, cigars, and cigarette)		Free.		
61	Vegetables		Free.		
62	Wood, and manufactures		Free.		
63	Wool		Free.		
64	Zinc		Free.		

NOTE—Liquors. Per imperial gallon, or six quart bottles. Ale, beer, and porter, except when condensed or concentrated, 1 anna. Cider and other fermented liquors, 1 anna. Liquors, 4 rupees. Spirit intended to be used exclusively in arts or manufactures or in chemistry, and which has been rendered effectually and permanently unfit for human consumption, ad valorem, 5 per cent. Spirits, when used in drugs, medicines, or chemicals, in a proportion less than 20 per cent. of spirit of the strength of London proof, ad valorem, 5 per cent. Spirit, when so used in a proportion of 20 per cent. or upwards; spirit, perfumed, in wood, or in bottles containing more than 4 ounces; spirit, other sorts, 4 rupees, and the duty to be increased as the strength exceeds London proof. Wines, champagnes, and all other sparkling wines, 2 rupees, 8 anna. All other sorts of wines, 1 rupee.

CEYLON.

The full tariff of Ceylon was printed in Consular Reports No. 72, p. 494.

H. Ex. 58—16

AUSTRALASIA.

NEW SOUTH WALES.

Rates of duties charged on the following articles imported into the Colony of New South Wales under the existing tariff laws of the colony, in English and American currency.

[Prepared by Consul Griffin.]

Number.	Names of articles.	Duty in English currency.	Equivalent in American currency.
1	Agricultural implements.....	Free .....	.....
2	Animals: cattle, hogs, horses, mules, sheep, and all others	Free .....	.....
3	Art	Free .....	.....
4	Barks and extracts	Free .....	.....
5	Blacking	Free .....	.....
6	Bones, hoofs, horns, &c	Free .....	.....
7	Books, maps, and engravings	Free .....	.....
8	Brass manufactures	Free .....	.....
9	Breadstuffs	Free .....	.....
	Bread	Free .....	.....
	Biscuits	1d. per pound	\$0 02
	Indian corn	Free .....	.....
	Oats, rye, wheat, flour	Free .....	.....
10	Bricks .....	.....	.....
11	Brooms and brushes	Free .....	.....
12	Candles	1d. per pound	02
13	Carriages and horse-cars	Free .....	.....
14	Railway cars	Free .....	.....
15	Chemicals	Free .....	.....
16	Clocks and watches	Free .....	.....
17	Coal	Free .....	.....
18	Copper, ore, ingots, and bar	Free .....	.....
19	Cotton	Free .....	.....
20	Earth, stone, and china ware	Free .....	.....
21	Fertilizers	Free .....	.....
22	Fish, dried, preserved, or salt	1d. per pound	02
23	Flax, hemp, or jute	£2 per ton	9 73
	Manufactured rope	£2 per ton	9 73
24	Fruits:		
	Bottled, quarts	2s. per dozen	48
	Bottled, pints	1s. per dozen	24
	Dried	2d. per pound	04
	Tinned	2d. per pound	04
	Jams and jellies	2d. per pound	04
25	Furs	Free .....	.....
26	Glass manufactures	Free .....	.....
27	Glucose	Free .....	.....
28	Glue	Free .....	.....
29	Gunpowder	1d. per pound	02
30	Hair	Free .....	.....
31	Hay	Free .....	.....
32	Hides and skins	Free .....	.....
33	Honey	2d per pound	04
34	Hops	Free .....	.....
35	Ice	Free .....	.....
36	India-rubber manufactures	Free .....	.....
37	Iron and steel:		
	Galvanized iron bars, bundles, sheets, or corrugated ..	£2 per ton	9 73
	Galvanized manufactures	3s. per cwt	73
	Iron wire	£1 per ton	4 86
38	Jewelry	Free .....	.....
39	Lamps	Free .....	.....
40	Lead	Free .....	.....
41	Leather	Free .....	.....
42	Lime and cement	2s. per bushel	48
43	Malt liquors:		
	Beer, ale, porter, spruce, or other beer, in wood or casks.	6d. per gallon	12
	In bottles	9d. per dozen	18
44	Medical instruments	Free .....	.....

Rates of duties charged, &c.—Continued.

Number.	Names of articles.	Duty in English currency.	Equivalent in American currency.
45	Naval stores:		
	Rosin.....	Free.....	.....
	Tar.....	Free.....	.....
	Turpentine.....	1s. per gallon.....	\$0 24
46	Oil cake and meal.....	Free.....	.....
47	Oils:		
	Kerosene.....	6d. per gallon.....	12
	Animal, black.....	Free.....	.....
	Cocoanut and sperm oil.....	Free.....	.....
48	Paraffine wax.....	Free.....	.....
49	Paints.....	£2 per ton.....	9 73
50	Paper:		
	Writing and fancy.....	1s. per pound.....	24
	Brown and wrapping-paper.....	3s. 4d. per cwt.....	81
51	Plated ware.....	Free.....	.....
52	Provisions—meats, fresh, salt; oleomargarine, lard, butter, and cheese.....	Free.....	.....
53	Quicksilver.....	Free.....	.....
54	Seed.....	Free.....	.....
55	Soap.....	Free.....	.....
56	Spirits:		
	On all kinds of spirits imported into the colony, the strength of which can be ascertained by Sykes's hydrometer.....	12s. per gallon.....	2 92
	On all spirits and spirituous compounds imported into the colony.....	12s. per gallon.....	2 92
	Wines:		
	Sparkling.....	10s. per gallon.....	2 43
	Still wine.....	5s. per gallon.....	1 21
	Methylated spirits.....	2s. per gallon.....	48
57	Starch.....	1d. per pound.....	2
58	Sugar:		
	Raw.....	5s. per cwt.....	1 21
	Refined.....	6s. 8d. per cwt.....	1 62
	Molasses and treacle.....	3s. 4d. per cwt.....	81
59	Tin.....	Free.....	.....
60	Tobacco:		
	Manufactured, and snuff.....	2s. per pound.....	48
	Unmanufactured.....	1s. per pound.....	24
	Cigars.....	5s. per pound.....	1 21
	Cigarettes.....	5s. per pound.....	1 21
	Sheep-wash.....	3d. per pound.....	06
61	Vegetables.....	Free.....	.....
62	Wood:		
	Doors, each, and sashes, each.....	1s. each.....	24
	Lumber, dressed.....	2s. per 100 feet.....	48
	Undressed.....	1s. per 100 feet.....	24
63	Wool.....	Free.....	.....
	Woolpacks.....	3d. each.....	06

Duties collected on the following articles imported into New South Wales in accordance with the Government proposals submitted in the new tariff bill for the increase of certain duties of customs.

Number.	Names of articles.	Duties in English currency.	Equivalent in American currency.
1	Agricultural implements.....	5 per cent. ad valorem.....	.....
2	Animals: cattle, horses, hogs, mules, and sheep.....	Free.....	.....
3	Art work.....	5 per cent. ad valorem.....	.....
4	Bark and extracts.....	Free.....	.....
5	Blacking.....	5 per cent. ad valorem.....	.....
6	Bones, hoofs, and horns.....	Free.....	.....
7	Books, maps, &c.....	Free.....	.....
8	Brass manufactures: screws, bolt-rings.....	2s. per cwt.....	\$0 48
9	Breadstuff:		
	Barley, pearl Scotch, prepared and patented.....	1d. per pound.....	02
	Barley, plain.....	Free.....	.....
	Oatmeal.....	2s. 6d. per cwt.....	60
	Biscuits and crackers.....	2d. per pound.....	04
	Indian corn, wheat, and rye.....	.....	.....
10	Bricks.....	.....	.....

Duties collected, &c.—Continued.

Number.	Names of articles.	Duty in English currency.	Equivalent in American currency.
11	Brooms and brushes.....	5 per cent. ad valorem ..	
12	Candles	1½d. per pound	\$0 03
13	Carriages and horse-cars	5 per cent. ad valorem ..	
14	Cars	5 per cent. ad valorem ..	
15	Chemicals	5 per cent. ad valorem ..	
16	Clocks and watches	5 per cent. ad valorem ..	
17	Coal	5 per cent. ad valorem ..	
18	Copper ingots, bars, and sheets.....	Free	
19	Cotton:		
	Raw	Free	
	Manufactured	5 per cent. ad valorem ..	
20	Earthenware.....	5 per cent	
21	Fertilizers	Free	
22	Fish, dried or preserved.....	1d. per pound	02
23	Flax, hemp, and jute.....	Free	
	Manufactured	£2 per ton	9 73
24	Fruits:		
	Bottled quarts	2s. per dozen	48
	Bottled pints	1s. per dozen	24
25	Furs	Free	
26	Glass, manufactured.....	5 per cent. ad valorem ..	
27	Glucose (solid).....	5s. per cwt.	1 21
28	Glue	5 per cent. ad valorem ..	
29	Gunpowder:		
	Sporting	3d. per pound	06
	Blasting	1d. per pound	02
30	Hair	5 per cent.	
31	Hay	Free	
32	Hides and skins.....	Free	
33	Honey	1d. per pound	02
34	Hops	6d. per pound	12
35	Ice.....	5 per cent. ad valorem ..	
36	India-rubber goods.....	5 per cent. ad valorem ..	
37	Iron:		
	Scrap and old	Free	
	Bar, rod, plate, sheet, bundle, and hoop	10s. per ton	2 43
	Galvanized manufactures.....	£3 per ton	14 60
	Iron chains, not otherwise exempted.....	£1 per ton	4 86
	Galvanized, in bars, bundles, or sheets, or corrugated.....	£2 per ton	9 73
	Iron or steel wire.....	£1 per ton	4 86
	Wire netting	£1 10s. per ton	7 29
38	Jewelry	5 per cent. ad valorem ..	
39	Lamps	5 per cent. ad valorem ..	
40	Lead:		
	Pig	£1 per ton	4 86
	Sheet, roll, or pipe	£2 per ton	9 73
	Manufactured	5 per cent. ad valorem ..	
41	Leather and manufactures	5 per cent. ad valorem ..	
42	Lime.....	5 per cent. ad valorem ..	
	Cement	2s. per barrel.....	48
43	Malt liquors:		
	Beer, ale, porter, spruce, &c.:		
	In wood	6d. per gallon	12
	In bottles	9d. per gallon	18
	For 6 reputed quarts or 12 reputed pints	9d. per gallon	18
44	Medical instruments.....	5 per cent. ad valorem ..	
45	Naval stores:		
	Rosin and tar	5 per cent. ad valorem ..	
	Turpentine	1s. per gallon.....	24
46	Oil cakes and meal.....	5 per cent. ad valorem ..	
	Oat meal	2s. 6d. per cwt.....	60
47	Oils:		
	Oils, except black cocoanut and sperm.....	6d. per gallon	12
	Kerosene.....	6d. per gallon	12
	Oils in bottles, except essential oils:		
	Reputed quarts	1s. 6d. per dozen.....	36
	Reputed pints	9d. per dozen	18
	Reputed half-pints and smaller sizes.....	6d. per dozen	12
	Mineral	1s. per pound.....	24
	Vegetable.....	1s. per pound.....	24
48	Wax:		
	Japan	1s. per pound.....	24
	Paraffine	1s. per pound.....	24
49	Paints and colors ground in oil.....	£3 per ton	14 60
50	Paper:		
	Brown	3s. 4d.	81
	Advertising matter, circulars, posters, and notices, printed or lithographed, for distribution or for sale.....	1d. per pound	02

Duties collected, &c.—Continued.

Number.	Names of articles.	Duty in English currency.	Equivalent in American currency.
51	Plated ware.....	5 per cent. ad valorem ..	.....
52	Provisions :		
	Meat, poultry, game, potted or preserved, in tins or jars.	1 <i>d.</i> per pound	\$0 02
	Meat extract.....	2 <i>d.</i> per pound	04
	Oleomargarine and lard	1 <i>d.</i> per pound	02
	Butter	1 <i>d.</i> per pound	02
	Cheese	2 <i>d.</i> per pound	04
53	Quicksilver	5 per cent. ad valorem ..	.....
54	Seeds	Free .....	.....
55	Soap, toilet, scented and other than scented	1 <i>d.</i> per pound	03
56	Spirits:		
	On all kinds of spirits imported into the colony, the strength of which can be ascertained by Sykes's hydrometer. No allowance beyond 16.5 shall be made for the under-proof of any spirits of a less hydrometer strength than 16.5 underproof.	12 <i>s.</i> per proof gallon.....	2 92
	On all spirits and spirituous compounds imported into the colony, the strength of which cannot be ascertained by Sykes's hydrometer.	12 <i>s.</i> per liquid gallon....	2 92
	Case spirits: Reputed contents of two, three, or four gallons shall be charged— Two gallons and under, as two gallons. Over two gallons and not exceeding three, as three gallons. Over three gallons and not exceeding four, as four gallons.		
	Methylated spirits	2 <i>s.</i> per gallon.....	48
	Wine:		
	Sparkling, for 6 reputed quarts or 12 reputed pints.	10 <i>s.</i> per gallon	2 43
	Other kinds	5 <i>s.</i> per gallon	1 21
	Other kinds, for 6 reputed quarts or 12 reputed pints.	5 <i>s.</i> per gallon	1 21
57	Starch :		
	Starch powder	1½ <i>d.</i> per pound.....	03
58	Sugar and molasses	1½ <i>d.</i> per pound.....	03
	Sugar candy	5 per cent. ad valorem ..	.....
59	Tin:		
	Ingots	2 <i>d.</i> per pound.....	04
	Sheet	Free .....	.....
	Manufactures	5 per cent. ad valorem ..	.....
60	Tobacco:		
	Delivered from ship's side or from a customs bond for home consumption, manufactured, unmanufactured, and snuff.	3 <i>s.</i> per pound.....	73
	Unmanufactured, entered to be manufactured in the colony at the time of removal from a customs bond or from an importing ship, to any licensed tobacco manufactory, for manufacturing purposes only, into tobacco, cigars, or cigarettes.	1 <i>s.</i> per pound	24
	Sheepwash	3 <i>d.</i> per pound.....	06
61	Vegetables, preserved (not otherwise charged), salted, or in brine, in salt water, preserved mushrooms, and preserved tomatoes.	1 <i>d.</i> per pound.....	02
62	Timber:		
	Dressed	3 <i>s.</i> per 100 superficial feet	73
	Rough and undressed	1 <i>s.</i> 6 <i>d.</i> per 100 superficial feet.	36
	Palings	1 <i>s.</i> per 100 feet.....	24
	Laths	Per 1,000.....	18
	Pickets, dressed	As dressed timber .....	.....
	Shingles.....	Per 1,000.....	24
	Wood manufactures.....	5 per cent. ad valorem ..	.....
63	Wool and woolen manufactures	5 per cent. ad valorem ..	.....
	Wool packs	3 <i>s.</i> 4 <i>d.</i> per cwt.....	81
64	Zinc:		
	Plain sheet.....	2 <i>s.</i> per cwt.....	48
	Perforated or manufactured.....	3 <i>d.</i> per cwt	06

NOTE.—The full tariff of New South Wales was printed in Consular Reports No. 51, p. 677.

VICTORIA.

Victorian tariff duties.

[Prepared by Consul-General Morgan.]

Number.	Tariff classification.	Duty.	Equivalent in United States money.
1	Agricultural implements.....	20 per cent. ad valorem.	\$0 06
	Reapers and binders	Free .....	.....
2	Animals:		
	Cows, oxen, heifers, bulls, steers, calves over six months old (except working bullocks in teams.	5s. each	1 20
	Pigs.....	2s. each.....	48
	Horses, mares, geldings, colts, and fillies not in saddle or harness.	5s. each	1 20
	Mules (as horses)	5s. each	1 20
	Sheep, whether rams, ewes, wethers, or lambs.....	6d. each	12
3	Art works	Free .....	.....
4	Bark	Free.....	.....
5	Blacking	20 per cent. ad valorem.	.....
6	Bones, hoofs, horns, &c.....	Free.....	.....
7	Books (printed), engravings, &c	Free.....	.....
8	Brass and manufactures of.....	25 per cent. ad valorem.	.....
9	Breadstuffs:		
	Barley	2s. per cental	48
	Barley, pearl.....	5s. per cental	1 20
	Biscuits:		
	Fancy.....	2d. per pound	04
	Ship and old.....	Free.....	.....
	Maize.....	1s. per cental	24
	Oats.....	2s. per cental	48
	Rye	1s. per cental	24
	Wheat	2s. per cental	48
	Flour.....	2s. per cental	48
10	Bricks:		
	Air.....	25 per cent. ad valorem.	.....
	Clay.....	Free.....	.....
	Fire.....	20s. per 1,000	4 86
11	Brooms and brushes, except artists' brushes.....	25 per cent. ad valorem.	.....
12	Candles	2d. per pound	04
13	Carriages and horse-cars, including second-hand:		
	All carriages and carts and wagons without springs, and spring carts and spring drays with two wheels.	20 per cent. ad valorem.	.....
	Tilburies, dog-carts, gigs, Boston chaises, and other two-wheeled vehicles on springs or thorough braces.	£10 each.....	48 66
	Express-wagons and wagons for carrying goods, and single or double-seated wagons, and four-wheeled buggies with tops.	£20 each.....	97 32
	Omnibuses and coaches for carrying mails or passengers.	£40 each.....	194 64
	Barouches, broughams, mail phaetons, drags, and other carriages not otherwise enumerated.	£50 each.....	243 30
	NOTE.—Any separate parts of carriages not specially enumerated as dutiable or free are chargeable with such duty as the commissioner may determine.		
14	Cars (railroad and tram) not specially enumerated beyond the above.		
15	Chemicals:		
	Acid:		
	Acetic.....	3d. per pound	06
	Carbolic	6d. per gallon.....	12
	Carbolic, pure.....	6d. per pound	12
	Oxalic	2d. per pound.....	04
	Pieric	3d. per pound.....	06
	Aloes.....	12s. per cwt.....	2 91

Victorian tariff duties—Continued.

Number.	tariff classification.	Duty.	Equivalent in United States money.
15	Chemicals—Continued.		
	Ammonia:		
	Carbonate of.....	2d. per pound.....	\$ 04
	Liquid.....	2d. per pound.....	4
	Cannabis Indica.....	1d. per pound.....	2
	Cocculus Indicus.....	1s. 6d. per cwt.....	36
	Fabaamara.....	1s. 6d. per cwt.....	36
	Gelatine.....	6d. per pound.....	12
	Glycerine:		
	Pure.....	3d. per pound.....	6
	Crude.....	1d. per pound.....	2
	Grains of Paradise, or Guinea grains.....	2s. per cwt.....	48
	Morphia.....	1s. 6d. per ounce.....	36
	Nitrate of silver.....	6d. per ounce.....	12
	Nux vomica.....	1s. 6d. per cwt.....	36
	Potassium:		
	Iodide of.....	10d. per pound.....	20
	Bromide of.....	3d. per pound.....	6
	Quassia.....	40s. per ton.....	9 60
	Strychnine.....	1s. per ounce.....	24
	Dynamite.....	4d. per pound.....	8
	Acids, undescribed.....	5s. per cwt.....	1 20
	Alkali:		
	Potash.....	Free.....	
	Soda ash.....	Free.....	
	Soda, bicarbonate.....	Free.....	
	Soda, caustic.....	Free.....	
	Soda crystals.....	40s. per ton.....	9 60
	Alum.....	Free.....	
	Arsenic.....	Free.....	
	Asphalt.....	Free.....	
	Borax.....	Free.....	
	Nitrate of soda.....	Free.....	
	Silicate of soda.....	Free.....	
	Dyes.....	Free.....	
	Essences and essential oils.....	Free.....	
16	Clocks and watches.....	20 per cent. ad valorem.....	
	Watchmakers' materials.....	Free.....	
17	Coal, coke, charcoal, and kerosene shale.....	Free.....	
18	Copper:		
	Ore, sheet, wire, &c.....	Free.....	
	Bronzed copper pipes.....	25 per cent. ad valorem.....	
	Copper ware not otherwise enumerated.....	25 per cent. ad valorem.....	
19	Cotton, piece goods, all cotton manufactures, such as counterpanes, &c., cotton-waste, cotton wick, linen piece goods, linen manufactures, such as table-linen, towels, &c.....	Free.....	
20	Earthen, stone, and china ware:		
	China ware and porcelain.....	2s. 6d. per cubic foot measurement.....	60
	Earthenware.....	1s. 4d. per cubic foot measurement.....	32
	Stoneware.....	20 per cent. ad valorem.....	
21	Fertilizers, manures.....	Free.....	
22	Fish:		
	Preserved, not salted or dried, or preserved in lime, and fish potted.....	2d. per pound.....	4
	Fresh, salted, and shell.....	Free.....	
23	Flax, Pharmium, New Zealand, and yarn.....	Free.....	
	Hemp.....	Free.....	
	Hemp cordage.....	11s. 3d. per cwt.....	2 71
	Jute.....	Free.....	
	Jute piece goods.....	½d. to ¾d. per yard.....	½ to 1
24	Fruit:		
	Fresh.....	9d. per bushel.....	18
	Bottled, dried, and preserved.....	2d. per pound.....	4
25	Furs:		
	Dressed.....	25 per cent. ad valorem.....	
	Undressed.....	Free.....	
26	Glass:		
	Plate and window.....	Free.....	
	Bottles.....	6d. per doz., 3d. per doz.....	6 to 12
	Shades and globes, and all other glassware, cut and engraved.....	2s. 6d. per cubic foot.....	60
	Chimneys, and all other glassware, not cut.....	1s. per cubic foot.....	24

Victorian tariff duties—Continued.

Number.	Tariff classification.	Duty.	Equivalent in United States money.
27	Glucose.....	3s. per cwt.....	\$0 26
28	Glue.....	2d. per pound.....	4
29	Gunpowder:		
	Fuse.....	1½s. per coil of 24 feet or less.	3
	Lithofractem.....	1d. per pound.....	2
	Blasting powder.....	1d. per pound.....	2
	Sporting.....	3d. per pound.....	6
	Fine.....	Free.....	
30	Hair:		
	Curled.....	2d. per pound.....	4
	Seating.....	Free.....	
31	Hay and chaff.....	Free.....	
32	Hides and skins, of all kinds, with and without wool, and undescribed.....	Free.....	
33	Honey.....	2d. per pound.....	4
34	Hops.....	6d. per pound.....	12
35	Ice. (Not mentioned in tariff.).....		
36	India-rubber goods.....	Free.....	
37	Iron and steel:		
	Bar and rod, galvanized cordage, galvanized sheet, hoop and pig iron, iron plate and wire, scrap, and sheet iron and tanks.....	Free.....	
	All other iron manufactures and galvanized ware.....	25 per cent. ad valorem.....	
	Steel and cordage.....	Free.....	
38	Jewelry (except cameos and precious stones unset), viz:		
	Rings of gold, finished or unfinished, but without cameos or precious stones therein.....	4s. per dwt., troy.....	96
	All other jewelry of gold, finished or unfinished, but without cameos or precious stones set therein.....	3s. per dwt., troy.....	72
	Chains of gold, unfinished (except machine-made chains for fringes).....	1s. per dwt., troy.....	24
39	Lamps and lamp ware, gasalier and chandeliers.....	25 per cent. ad valorem.....	
40	Lead, sheet and piping.....	2s. 6d. per cwt.....	60
41	Leather:		
	Calf and kid.....	7½ per cent. ad valorem.....	
	Patent, and colored fancy leathers.....	10 per cent. ad valorem.....	
	All other leathers (except crust or rough tanned hog skins, calf and goat, and shumach-tanned sheep.....	20 per cent. ad valorem.....	
	Leather cut into shapes, including elastic-side uppers and Wellington legs, clogs, and pattens.....	20 per cent. ad valorem.....	
	Boots and shoes, present English sizes to be the standard (except children's Nos. 0 to 3), viz:		
	Men's No. 6 and upwards.....	33s. per dozen pairs.....	8 03
	Youths', Nos. 2 to 5.....	21s. per dozen pairs.....	5 11
	Boys', Nos. 7 to 1.....	17s. 6d. per dozen pairs.....	4 26
	Women's, No. 3 and upwards.....	16s. 6d. per dozen pairs.....	4 74
	Girls', Nos. 11 to 2.....	16s. per dozen pairs.....	3 88
	Girls', Nos. 7 to 10.....	11s. 6d. per dozen pairs.....	2 79
	Children's, Nos. 4 to 6, and slippers.....	6s. per dozen pairs.....	1 44
	Women's lasting and stuff boots.....	13s. per dozen pairs.....	3 16
	Slippers, men's, women's, and children's, from No. 7 and upwards.....	9s. per dozen pairs.....	2 19
42	Lime and cement.....	Free.....	
43	Malt liquors:*		
	Ale, porter, spruce, and other beer, cider, and perry, for 6 reputed quart bottles or 12 reputed pint bottles.....	9d. per gallon.....	18
	Same, in wood or bottles, containing imperial quart or pint, respectively.....	9d. per gallon.....	18
44	Medical instruments.....	Free.....	
45	Naval stores, pitch, tar, resin, and turpentine.....	Free.....	
46	Oil cake and meal.....	Free.....	
47	Oils:		
	Animal and vegetable, other than black, cocoanut, cod, or palm.....	6d. per gallon, in bulk..	12
	Mineral, refined, of which the point of ignition is above 80° Fahr., colza, and olive, animal and vegetable, in bulk.....	6d. per gallon.....	12
	Oils, including castor or cod liver, when refined or for medicinal purposes, in bottles of a quart or less than a quart:		
	Quarts.....	2s. per dozen.....	48
	Pints.....	1s. per dozen.....	24
	Half pints and smaller sizes.....	6d. per dozen.....	12

Duty on bottles charged also.

Victorian tariff duties—Continued.

Number.	Tariff classification.	Duty.	Equivalent in United States money.
48	Paraffine and wax:		
	Wax	Free	
49	Paints:		
	Ground in oil	40s. per ton	\$9 72
	Mixed, ready for use	80s. per ton	19 45
50	Paper:		
	Note, letter, writing, fancy, and blotting, with cut edges.	2d. per pound	4
	Uncut, blotting, surface, drawing, and other papers (except printing and writing, in original wrappers and uncut edges, as it leaves the mill, paper hangings, cardboard, and millboard.)	4s. per cwt	96
	Paper bags	10s. per cwt	2 43
	Paper and cardboard boxes (not containing goods ordinarily imported therein).	25 per cent. ad valorem	
51	Plated ware, plated and mixed metal ware (except door-handles, locks, shaft-tips, stump and finger joints, and slot-irons used in carriage building, harness mountings, and plated hames).	20 per cent. ad valorem	
52	Provisions:		
	Meats:		
	Fresh or frozen	Free	
	Preserved (not salted or dried or preserved in brine) and potted meats.	2d. per pint or pound, or reputed package of that quantity or weight, and so on in proportion.	04
	Salted beef and pork	5s. per cwt	1 20
	Hams	2d. per pound	04
	Butter and cheese and honey	2d. per pound	04
	Lard	Free	
	Oleomargarine		
53	Quicksilver	Free	
54	Seeds:		
	Canary	10 per cent. ad valorem	
	Clover, grass, and undescribed	Free	
55	Soap:		
	Perfumed and toilet	4d. per pound	08
	Other	2d. per pound	04
56	Spirits:		
	Spirits, cordials, liqueurs, or strong waters, sweetened or mixed with any articles so that the degree of strength cannot be ascertained by Sykes' hydrometer (including all alcohol diluted or undiluted, with water or other menstruum, and containing in solution any essence, essential oil, ether, or other flavoring or other substance, whether of natural or artificial origin).	12s. per gallon	2 91
	Perfumed	24s. per gallon	5 83
	Methylated	1s. per liquid gallon	24
	Spirits mixed with essential oils, so as to be unfit for human consumption, to be used in the manufacture of soap, are exempt from duty, provided the mixing is performed in the presence of an officer of customs, other sorts, such as brandy, rum, gin, whisky, cordials, and bitters, spirits of wine, and other undescribed.	12s. per gallon	2 91
57	Starch	2d. per pound	04
58	Sugar and molasses (except unrefined molasses)	3s. per cwt	72
59	Tin:		
	Block, foil, ore, blacksand tin-plate	Free	
	Tin-ware	25 per cent. ad valorem	
60	Tobacco (except sheepwash, including tobacco soaked, on the landing thereof from the importing ship, or on delivery from the warehouse, in turpentine, oil, or other fluid, in the presence of some officer of customs, so as to render it unfit and useless for human consumption):		
	Manufactured	3s. per pound	72
	Unmanufactured	1s. per pound	24
	Cigars and cigarettes	6s. per pound	1 44
	Snuff	3s. per pound	72

Victorian tariff duties—Continued.

Number.	Tariff classification.	Duty.	Equivalent in United States money.
61	Vegetables:		
	Fresh	Free	
	Preserved	2d. per pound	\$0 04
	Salted	5s. per cwt	1 20
62	Wood, woodenware	25 per cent. ad valorem	
63	Wool, greasy, washed, scoured, and Angora	Free	
64	Zinc:		
	Ingots	Free	
	Perforated	25 per cent. ad valorem	
	Sheet	Free	

NEW ZEALAND.

Tariff duties of New Zealand.

No.	Description of merchandise.	Duty.
1	Agricultural implements	Free.
2	Animals: Cattle, hogs, horses, mules, sheep, and all others.....	Free.
3	Art works	15 per cent. ad valorem.
4	Bark:	
	Extracts of bark.....	15 per cent. ad valorem.
5	Blacking.....	15 per cent. ad valorem.
6	Bones, hoofs, horns, &c.....	Free.
7	Books (reading):	
	Gift books, such as Shakespeare's every day gem-book and birthday books.....	15 per cent. ad valorem.
	Maps	Free.
	Engravings, &c.....	15 per cent. ad valorem.
8	Brass in pigs, bars, or sheets	Free.
	Brass manufactures.....	15 per cent. ad valorem.
9	Breadstuffs:	
	Barley	9d. per 100 pounds.
	Indian corn	9d. per 100 pounds.
	Oats	9d. per 100 pounds.
	Rye	9d. per 100 pounds.
	Wheat	9d. per 100 pounds.
	Flour	1s. per 100 pounds.
	Bread (if ship-biscuit)	3s. per cwt.
	Biscuits:	
	Plain and unsweetened	3s. per cwt.
	Fancy.....	2d. per pound.
	Flour	1s. per 100 pounds.
10	Bricks (not known).	
11	Brooms and brushes.....	15 per cent. ad valorem.
12	Candles:	
	Tallow.....	1d. per pound.
	Other sorts	1d. per pound.
13	Carriages and horse-cars.....	15 per cent. ad valorem.
14	Cars (railroad steam)	Free.
15	Chemicals	15 per cent. ad valorem.
16	Clocks and watches.....	15 per cent. ad valorem.
17	Coal	Free.
18	Copper, ore, ingots, bar, and sheet	Free.
19	Cotton-waste.....	Free.
	Cotton manufactures	15 per cent. ad valorem.
20	Earthen and china ware	Free.
21	Fertilizers	Free.
22	Fish	2s. per cwt.
23	Flax, hemp, and jute	Free.
	Manufactures	15 per cent. ad valorem.
24	Glass:	
	Common window	2s. per 100 feet.
	Plate, polished, colored.....	15 per cent. ad valorem.
	Bent carriage.....	15 per cent. ad valorem.
	Manufactures.....	15 per cent. ad valorem.
25	Fruits:	
	In sirup.....	15 per cent. ad valorem.
	Bottled	1s. per dozen.
	Dried	2d. per pound.
	American, in tins	15 per cent. ad valorem.
26	Furs.....	15 per cent. ad valorem.
27	Glucose.....	1d. per pound.
28	Glue	Free.
29	Gunpowder	6d. per pound.
30	Hair	Free.
31	Hay.....	Free.
32	Hides and skins.....	Free.
33	Honey	Free.
34	Hoops:	
	If mast hoops.....	Free.
	If iron cask hoops.....	15 per cent. ad valorem.
35	Ice.....	Free.
36	India-rubber manufactures.....	15 per cent. ad valorem.

Tariff duties of New Zealand—Continued.

No.	Description of merchandise.	Duty.
37	Iron and steel, common black-sheet, corrugated, and plain galvanized	Free.
	Ironmongery	15 per cent. ad valorem.
38	Jewelry	15 per cent. ad valorem.
39	Lamps:	
	Carriage	Free.
	Other kinds	15 per cent. ad valorem.
40	Lead:	
	Pig, bar, and sheet	Free.
	Piping	3s. 6d. per cwt.
	Manufactures	15 per cent. ad valorem.
41	Leather:	
	Sole	½d. per pound.
	Other sorts	1d. per pound.
	Manufactures	15 per cent. ad valorem.
42	Lime	Free.
	Cement	1s. per barrel.
43	Malt liquors (beer, &c.) in bottle, the gallon, or for 6 reputed quart bottles.	1s. 6d. per gallon.
44	Medical instruments	Free.
45	Naval stores:	
	Rosin	Free.
	Tar	Free.
	Spirits of turpentine	6d. per gallon.
	Pitch	Free.
46	Oil cake and meal	Free.
47	Oil, animal, mineral, vegetable	6d. per gallon.
48	Paraffine and wax	1d. per pound.
49	Paint	2s. per cwt.
50	Paper:	
	Printing	Free.
	Writing, the size of demi and above, with uncut edges, as it leaves the mill.	Free.
	Bags	5s. per cwt.
	Wrapping (brown)	2s. per cwt.
	Drawing	15 per cent. ad valorem.
	Tin-foil	2s. 6d. per cwt.
51	Plated ware	15 per cent. ad valorem.
52	Provisions:	
	Meats:	
	Fresh, potted, and preserved	15 per cent. ad valorem.
	Salt	Free.
	Oleomargarine (not known.)	Free.
	Lard	Free.
	Butter	Free.
	Cheese	Free.
53	Quicksilver	Free.
54	Seeds	Free.
55	Soap:	
	Common	3s. 6d. per cwt.
	Fancy	25 per cent. ad valorem.
56	Spirits	14s. 6d. per gallon.
57	Starch	3s. per cwt.
58	Sugar and molasses	½d. per pound.
59	Tin	Free.
	Tinware	15 per cent. ad valorem.
60	Tobacco:	
	Leaf	3s. 6d. per pound.
	Cigars	6d. per pound.
	Cigarettes	6d. per pound.
61	Vegetables:	
	Dried	Free.
	Preserved	15 per cent. ad valorem.
62	Wood:	
	If dressed shelving	4s. per 100 feet sap.
	Manufactures	15 per cent. ad valorem.
63	Wool (manufactures)	15 per cent. ad valorem.
64	Zinc:	
	Plain sheet	Free.
	Piping and roll	1s. per cwt.
	Manufactures	15 per cent. ad valorem.

ARRANGEMENT.

The foregoing tariffs were sent to the Department in reply to a special circular calling for the duties imposed upon sixty-four different classes of commodities, and may easily be referred to, as, with two exceptions, the marginal numbering and the arrangement of commodities are uniform and on the following plan :

- | | |
|---|--|
| 1. Agricultural implements. | 34. Hops. |
| 2. Animals. | 35. Ice. |
| 3. Art works. | 36. India-rubber and manufactures of rubber. |
| 4. Bark and extracts. | 37. Iron and steel and manufactures of iron. |
| 5. Blacking. | 38. Jewelry. |
| 6. Bones, hoofs, and horns. | 39. Lamps. |
| 7. Books. | 40. Lead and manufactures of lead. |
| 8. Brass and manufactures of brass. | 41. Leather and manufactures of leather. |
| 9. Breadstuffs. | 42. Lime and cement. |
| 10. Bricks. | 43. Malt liquors. |
| 11. Brooms. | 44. Medical instruments. |
| 12. Candles. | 45. Naval stores. |
| 13. Carriages. | 46. Oil cake and meal. |
| 14. Cars. | 47. Oils, animal, vegetable, and mineral. |
| 15. Chemicals. | 48. Paraffine and wax. |
| 16. Clocks, watches, and their parts. | 49. Paints and colors. |
| 17. Coal. | 50. Paper and manufactures of paper. |
| 18. Copper and manufactures of copper. | 51. Plated ware. |
| 19. Cotton and manufactures of cotton. | 52. Provisions. |
| 20. Earthen, stone, and china ware. | 53. Quicksilver. |
| 21. Fertilizers. | 54. Seeds. |
| 22. Fish. | 55. Soap. |
| 23. Flax, hemp, and jute, and manufactures of these fibers. | 56. Spirits. |
| 24. Fruits. | 57. Starch. |
| 25. Furs. | 58. Sugar and molasses. |
| 26. Glass and manufactures of glass. | 59. Tin and manufactures of tin. |
| 27. Glucose. | 60. Tobacco and manufactures of tobacco. |
| 28. Glue. | 61. Vegetables. |
| 29. Gunpowder. | 62. Wood and its manufactures. |
| 30. Hair. | 63. Wool and manufactures of wool. |
| 31. Hay. | 64. Zinc and manufactures of zinc. |
| 32. Hides and skins. | |
| 33. Honey. | |

Item No. 10 should have read bricks, but the i was not dotted in the circular, and most of the consuls reported the duties on bucks. This will account for the omission of that item in most tables and the variety in others.

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ACCOUNT OF J. W. JACOBS.

L E T T E R

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, an estimate from the Attorney-General of an appropriation to pay J. W. Jacobs, sheriff of Keokuk County, Iowa, for services in arresting persons concerned in the burglary of the post-office, Webster City, Iowa.

JANUARY 6, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 5, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General of October 22, 1886, submitting for an appropriation the account, with accompanying papers, of J. W. Jacobs, late sheriff of Keokuk County, Iowa, for \$341.35, for services in the apprehension of certain persons concerned in the burglary of the post-office at Webster, Iowa.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, October 22, 1886.

SIR: Inclosed is an account of \$341.35 in favor of J. W. Jacobs, late sheriff of Keokuk County, Iowa, on account of his fees and disbursements before United States Commissioner John Rogers, in cases of John Coy and John Parks, charged with burglary of a post-office at Webster, Iowa.

The account was referred to this Department by the First Auditor of the Treasury on September 1, 1886, for appropriate action. The Department has no power of approval or disapproval of such an account.

The original is retained in this office, and the inclosed copy is for your use in transmitting the matter to Congress.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

TREASURY DEPARTMENT,
FIRST AUDITOR'S OFFICE,Hon. A. H. GARAAND,
Attorney-General:

September 1, 1886.

SIR: I have the honor to herewith inclose the account of J. W. Jacobs, late sheriff of Keokuk County, Iowa, for services in cases *vs. John Coy et al.* and *vs. John Parks et al.*, from August 17 to September 11, 1882, for your appropriate action.

Very respectfully,

E. P. BALDWIN,
Acting First Auditor.

District court of the United States for the southern district of Iowa, June term, A. D. 1886.

Whereas J. W. Jacobs, ex-sheriff Keokuk County, Iowa, has rendered to this court an account of his fees and disbursements at and before John Rogers, United States commissioner, in two cases—John Parks and John Jasper McCoy—to the June, 1886, term of the United States district court, with the vouchers and items thereof, and in presence of W. T. Rankin, assistant United States attorney, has proved, on oath, to the satisfaction of the court, that the services and travel therein charged have been actually and necessarily performed as therein stated, and that the disbursements charged have been fully paid in lawful money; and whereas said charges appear to be just and according to law—

It is hereby ordered that said account, amounting to three hundred and forty-one dollars and thirty-five cents, be and the same is hereby, approved.

UNITED STATES OF AMERICA,
Southern district of Iowa, ss:

I, H. K. Love, clerk of the United States district court for the southern district of Iowa, do hereby certify the above and foregoing to be a true and correct transcript from the records of this court, entered of record this 7th day of July, A. D. 1886, as fully as the same appears upon the original records of this court.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at my office, in Keokuk, in said district, this 7th day of July, A. D. 1886, and of the Independence of the United States of America the one hundred and eleventh year.

H. K. LOVE,
Clerk,

[SEAL.]

By ERIE J. LEECH,
Deputy.

PRELIMINARY EXAMINATION BY JOHN ROGERS, UNITED STATES COMMISSIONER.

THE UNITED STATES }
vs. }
JOHN COY AND W. J. COY. }

Charge: Burglarizing and entering post-office at Webster, Iowa.

Fee-bill of J. W. Jacobs, sheriff of Keokuk County, Iowa.

Date.	Application.	Amount.
1882.		
Aug. 17	Serving two warrants on accused.....	\$4. 00
Do	Mileage, 10 miles	1 00
Do	Conveying prisoner.....	3 00
Do	Commitment to prison.....	1 00
Aug. 26 and 27 ..	Attending examination before United States commissioner, bringing and guarding and returning prisoner, two days	4 00
Aug. 27	Discharging prisoner	1 00
Aug. 17 to 27 ..	Boarding prisoners (2) ten days each, at 65 cents	13 00
Aug. 27	Subpœnaing nine witnesses for plaintiff, at 20 cents and 10 cents per copy ..	2 70
Do	Mileage, 30 miles, 5 cents each way	3 00
Do	Subpœnaing seven witnesses for defendant, at 20 cents, and 50 cents each way ..	2 00
	Total	36 80

STATE OF IOWA,
Keokuk County :

J. W. Jacobs, ex-sheriff of Keokuk County, Iowa, being duly sworn, deposes and says that the foregoing is true and correct and unpaid; that he has personal knowledge of the facts, and the services charged for therein have been actually and necessarily performed, as therein stated.

Dated at Sigourney, Iowa, this 19th day of June, 1886.

J. W. JACOBS.

Sworn to before me and subscribed in my presence by the said J. W. Jacobs, ex-sheriff, this 19th day of June, 1886.

[SEAL.]

J. P. TALLEY,
Notary Public.

In the district court of the United States for the southern district of Iowa.

THE UNITED STATES, plaintiff, }
vs. }
JOHN PARKS, JOHN COY, and }
JASPER COY, defendants. }

Charge: Burglary of post-office at Webster, Keokuk County, Iowa.

Fee-bill of J. W. Jacobs, sheriff of Keokuk County, Iowa, in preliminary examination, &c., before John Rogers, United States commissioner, Sigourney, Iowa.

Date.	Application.	Amount.
1882.		
Sept. 5	Serving warrant on John Parks.....	\$2 00
Aug. 17, 18, 19, 20, 21.	Traveled 200 miles endeavoring to make arrest; mileage at 5 cents each way.	20 00
Sept. 1	Going to Scottsburg, Ind., to serve warrant on John Parks, 757 miles, at 5 cents one way.	75 70
	Paid road fare, sheriff and prisoner.....	68 13
	Expenses actually paid out.....	50 00
Sept. 8, 9, 11, 12	Attending examination before United States commissioner, bringing in, guarding, and returning prisoners.	8 00
Do.....	For two deputies necessarily employed:	
	For Parks and Coy	1 60
Sept. 7	Serving warrant on John and Jasper Coy.....	4 00
Do.....	Mileage, 12 miles, at 5 cents each way.....	1 20
Sept. 5, 6, 7.....	Expenses while employed endeavoring to arrest John and Jasper Coy, 2½ days.	5 00
Do.....	Conveyance for prisoners.....	3 00
Sept. 7, 8, 9, 11, 12	Serving subpoenas on 18 witnesses, per record in case (plaintiff's witnesses), 20 cents for each witness, 10 cents copy.	5 40
	Mileage on same, at 5 cents each way	3 00
Sept. 7, 8, 9, 11, 12....	Serving subpoenas on 6 witnesses, as per record in case (defendants' witnesses), at 20 cents each witness, and 10 cents for copy.	1 80
	Mileage on subpoenas, 80 miles, 5 cents each way.....	8 00
Sept. 6.....	Commitment of the 3 prisoners named	1 50
Sept. 12.....	Discharge of Jasper Coy	50
Sept. 6.....	Board of Jasper Coy, 6 to 12, at 65 cents	3 90
Do.....	Board of John Parks, 6 to 18, at 65 cents	8 45
Do.....	Board of John Coy, 6 to 18, at 65 cents.....	8 45
Do.....	Washing for prisoners.....	1 25
	Total	304 58

STATE OF IOWA,
Keokuk County, ss:

J. W. Jacobs, ex-sheriff of Keokuk County, Iowa, being duly sworn, says that the foregoing bill is correct and true and unpaid; that he had personal knowledge of the facts, and that the services charged therein have been actually and necessarily performed therein as stated, and that this bill is made out as per sheriff's fee-bill, and as directed by the First Comptroller of the Treasury Department.

J. W. JACOBS.

Subscribed in my presence and sworn to before me by the said J. W. Jacobs this 18th day of June, A. D. 1886.

[SEAL.]

J. P. TALLEY,
Notary Public.

TREASURY DEPARTMENT,
FIRST COMPTROLLER'S OFFICE,
Washington, D. C., April 12, 1886.

Hon. J. B. WEAVER, M. C.,
House of Representatives:

SIR: The account of J. W. Jacobs for his services in the apprehension, &c., of certain robbers of the post-office at Webster, Keokuk County, Iowa, which was referred by you to this office a few days ago, is herewith returned with the suggestion that you have Mr. Jacobs make out his account according to the State law that governed sheriff's fees at the time he performed the services. The present account is made out according to the United States marshal's fee-bill. Mr. Jacobs describes himself in the account as sheriff of Keokuk County and acting deputy marshal. As a deputy marshal he has no claim against the United States. All fees that accrue by reason of the services of deputy marshals accrue to the marshal. The law provides for a marshal certain fees for certain services, and allows him to perform the services by another (a deputy) as well as by himself; but all fees, so earned, are the marshal's fees, and are due and payable to him only.

When properly made out the account should be approved in open court and a duplicate thereof filed by the clerk of the United States court in his office, in accordance with the act of February 22, 1875 (chap. 95, p. 333, vol. 19, U. S. Stat. at Large.)

Very respectfully,

M. J. DURHAM,
Comptroller
By J. R. GARRISON,
Deputy Comptroller.

ACCOUNT OF W. W. JOHNSON.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, an estimate from the Attorney-General of an appropriation to pay W. W. Johnson for services in prosecuting Jessie H. Roberson for embezzlement of United States post-office funds and letters.

JANUARY 6, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 5 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General, of October 27, 1886, submitting, for an appropriation, the account, with accompanying papers, of W. W. Johnson, for services rendered in prosecuting Jessie H. Roberson, charged with embezzlement of United States post-office funds and letters.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, October 27, 1886.

SIR: Inclosed are copies of letters of July 29, August 5, October 12 and 22, respecting the account of W. W. Johnson for services in the case against Jessie H. Robinson [Roberson], prosecuted for embezzlement of post-office funds and letters before C. S. Yates, a justice of the peace for Franklin County, Texas.

Mr. Johnson is not a district attorney, and he was not appointed an assistant to a district attorney in conformity with section 365, Revised Statutes.

The Postmaster-General, on October 22, states that the appropriation for mail depredations and post-office inspectors for the fiscal year 1885 is entirely exhausted. These facts place the matter in a condition for

which there is no provision by law, the accounting officers of the Treasury strictly construing section 365 to make it impossible to pay other than district attorneys or their assistants for legal services rendered to the United States.

There seems to be no remedy but an appeal to Congress. Although the account is small, the matter is a question of law.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

POST-OFFICE DEPARTMENT,
OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., October 22, 1886.

SIR: All papers in the claim of one W. W. Johnson, county attorney of Franklin County, Texas, for services rendered in the case of *The State of Texas v. Jessie H. Roberson*, are herewith returned with the information that there is no available fund out of which the claim in question can lawfully be paid, in view of the fact that the appropriation for mail depredations and post-office inspectors for the fiscal year 1885 is entirely exhausted.

Very respectfully,

WILLIAM P. VILAS,
Postmaster-General.

The ATTORNEY-GENERAL,
Department of Justice.

JEFFERSON, *October 12, 1886.*

Hon. A. H. GARLAND,
Attorney General, Washington, D. C.:

DEAR SIR: Inclosed please find account of W. W. Johnson for prosecution of Jessie H. Robinson [Roberson], who was convicted of robbing the United States mail, September term of the United States court at Jefferson, 1885. The work was actually performed by Mr. Johnson, and the party bound over and convicted.

Very truly, yours, &c.,

W. E. SINGLETON,
Clerk.

MOUNT VERNON, TEX., *September 21, 1886.*

DEAR SIR: I herewith inclose you account of W. W. Johnson.

Will you be so kind as to forward the same, with a statement of the facts, to the United States Attorney-General, in compliance with the suggestion from the Acting Auditor, and you will very much oblige,

Yours, truly,

C. S. YATES.

Hon. W. E. SINGLETON,
United States Court Clerk, Jefferson, Tex.

TREASURY DEPARTMENT, FIRST AUDITOR'S OFFICE,
August 5, 1886.

SIR: Your account for services in the prosecution of J. H. Robinson [Roberson] is herewith returned.

This account cannot be allowed by this office until it has been approved by the

Attorney-General of the United States. I would suggest that you send the account to him, with a statement of the facts in the case, as I am not fully advised as to them.

Very respectfully,

E. P. BALDWIN,
Acting Auditor.

W. W. JOHNSON, Esq.,
Mount Vernon, Franklin County, Tex.

In the district court of the United States for the eastern district of Texas, holding sessions at Tyler, Tex.

At a special term of said court, begun and held at Tyler, Tex., on the 27th day of July, A. D. 1886.

Present, the Hon. Chauncey B. Sabin, judge, the following order was made and entered of record, to wit:

"Whereas W. W. Johnson, county attorney of Franklin County, Texas, has this day presented to this court his account for services rendered in the case of the State of Texas against Jessie H. Roberson, charged with embezzlement of United States post-office funds and letters, and in presence of John E. McComb, United States attorney, has proved on oath, to the satisfaction of the court, that the services charged for have been actually and necessarily performed as therein stated.

"And whereas said charges appear to be just and according to law—

"It is hereby ordered that said account be allowed, subject to a deduction of 50 cents; which said account, as above corrected, and amounting to \$5, is hereby approved."

I hereby certify that the above is a true copy from the record of an order made by said court on the 27th day of July, A. D. 1886.

Witness my hand and the seal of said court this 29th day of July, A. D. 1886.

[SEAL.]

W. A. ALLEN,
Clerk.

The United States of America Dr. to W. W. Johnson, county attorney of Franklin County, Texas.

1885.

May 1. For services rendered in prosecuting Jessie H. Roberson in the case of The State of Texas vs. Jessie H. Roberson charged with embezzlement of United States post-office funds and letters, before the honorable C. S. Yates, justice of the peace in and for Franklin County, Texas, April 30 and May 1, 1885, and who was held for his appearance to the September term of the United States district court at Jefferson, Tex., in the eastern district of Texas \$5.50

THE UNITED STATES OF AMERICA,
Eastern District of Texas, County of Franklin:

Before the undersigned authority personally appeared W. W. Johnson, county attorney in and for Franklin County, Texas, and within the eastern district of Texas, and one of the counties of the Jefferson division of said district, to me well known, and he, having been by me duly sworn, says that the services charged for in the foregoing account against the United States of America have been actually and necessarily performed as therein stated, and that the fees so charged are the same that the State of Texas pays county attorneys for the same service.

W. W. JOHNSON.

Sworn to and subscribed before me this day of May, A. D. 1885.

Witness my hand and notarial seal at my office in the town of Mount Vernon, Franklin County, this 13th day of May, 1885.

[SEAL.]

R. W. HOLBROOK,
County Clerk District Court, Texas.

ACCOUNT OF PATRICK H. WINSTON, JR.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, an estimate from the Attorney-General of an appropriation to pay Patrick H. Winston, jr., for legal services in defense of Tom Hill, captain of police, Nez Percé Agency.

JANUARY 6, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 5, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General of October 13, 1886, submitting for an appropriation the account, with accompanying papers, of Patrick H. Winston, jr., for \$250, for legal services rendered in defense of Tom Hill, captain of police at the Nez Percé Agency, charged with the murder of one Nine Pipes, an Indian.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, D. C., October 13, 1886.

SIR: Herewith are inclosed copies of letters, of the 7th instant, from the Secretary of the Interior; of the 5th instant, from the Acting Commissioner of Indian Affairs; of the 14th ultimo, from Patrick H. Winston, jr.; of the 8th of August last, from Judge Monteith, of the Nez Percé Agency; and of August 11 last, from Judge Norman Buck, judge in Idaho, together with copy of the account of Mr. Winston for defending Tom Hill, in the Territorial court, charged with the murder of "Nine Pipes."

The account is for \$250. It covers services that are not provided for by any appropriation under my control, and it is not seen how Mr.

Winston can be compensated in any way other than by Congressional appropriation. The account, therefore, is transmitted to you for submission to Congress at the next session.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, October 5, 1886.

SIR: I have the honor to transmit herewith the claim of Patrick H. Winston, jr., attorney at law, for expenses incurred in defending Tom Hill, a United States Indian policeman, at the Nez Percé Agency, Idaho, charged with murder, amounting to \$250.

As the alleged murder was committed by Hill while in the discharge of his duty, this office, in report dated November 11, 1885, recommended that the Attorney-General be asked to instruct the United States district attorney for Idaho to defend him, and on the 14th of November the Attorney-General informed the Department that such instructions had been given.

Late Agent Monteith having informed this office by telegraph, on the 2d of April, 1886, that the district attorney would not be present to defend Hill at his trial, it was recommended, in office report dated April 2, 1886, that the matter be referred to the Attorney-General, with request that proper steps be taken to secure competent counsel for Hill.

I have no further information as to the employment of counsel in this case, except the statement of the judge who presided at the trial, to the effect that in the absence of the district attorney he appointed Mr. Winston to defend Hill, who performed services of the greatest importance and earned a good fee, and the statement of late Agent Monteith that Mr. Winston defended Hill at his request in the absence of the district attorney, and did so faithfully.

I am of the opinion that Mr. Winston ought to be reimbursed for the expenses incurred by him, and therefore have the honor to recommend that the papers herewith inclosed be referred to the honorable Attorney-General for such action as he may think proper.

Very respectfully, your obedient servant,

A. B. UPSHAW,
Acting Commissioner.

The SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
Washington, October 7, 1886.

SIR: I have the honor to transmit herewith copy of a letter of 5th instant from the Commissioner of Indian Affairs, with accompanying papers noted therein, relating to an account, amounting to \$250, in favor of Patrick H. Winston, jr., for legal services rendered in defense of Tom Hill, captain of police at Nez Percé Agency, charged with murder.

The matter is respectfully presented for such action as you may deem proper.

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The Honorable the ATTORNEY-GENERAL.

LEWISTON, IDAHO, *September 14, 1886.*

SIR: In reply to yours of the 3d of September, I have the honor to submit the inclosed account. The facts of this case you have before you, presented by General Goode.

I will add this:

My visit to Mount Idaho saved Hill's life; that is sure. I will also say that this Indian lost confidence in every human being but me; and, when prostrated here with a sickness that gave every indication of terminating fatally, would take medicine from my hands alone, and after his acquittal brought my little boy a pretty Indian pony, worth here about \$7.

Very respectfully,

PATRICK H. WINSTON, JR.

Hon. JOHN D. C. ATKINS,

Commissioner of Indian Affairs, Washington, D. C.

The Government of the United States to Patrick H. Winston, jr., Dr.

To trip and expenses to Mount Idaho, Idaho, in behalf of the Indian captain of police, Tom Hill, indicted for murder.....	\$250
Received payment.	

P. H. WINSTON, JR.,
Attorney at Law.

THE PEOPLE OF THE TERRITORY OF IDAHO }
vs. }
TOM HILL.

The defendant, one of the hostile Nez Percés, lately returned from the Indian Territory to the Nez Percés Indian Reservation, Idaho, was indicted at spring term, 1885, of the United States district court at Mount Idaho, sitting as a Territorial court, for the murder of one Nine Pipes, an Indian, and not one of the hostiles. Mount Idaho is in Idaho County, which was the seat of the Nez Percés outbreak in 1877, and the feeling against Hill was very bitter there. Hill being captain of the Indian police on the reservation, and the killing having occurred in the discharge of his official duty, the Attorney-General, at the request of the Secretary of the Interior, directed the United States district attorney for Idaho to be present at the trial and defend Hill. That officer being unable to come on account of official engagements in South Idaho, I, at the request of the United States district judge, Hon. Norman Buck, and of the Indian agent, Mr. Charles Monteith (all the local bars of Mount Idaho he having been employed to prosecute) went to Mount Idaho, a distance of 65 miles, over a rough mountain road covered with snow, the trip occupying four days, and obtained, after a hard legal battle, a change of venue.

This saved the life of Tom Hill, an innocent man, who was to be made a sacrifice to the prejudice of the people of Idaho County, and subjected me to intense public odium for the discharge of my duty as a lawyer.

The case was tried here this spring, and occupied five days in the trial. I argued the law to the court and made the principal argument to the jury, the district attorney examining the witnesses and making a short speech to the jury. The defendant was acquitted.

All this work I did without a dollar of compensation and at my own expense, and without neglecting a single duty in the land office; having employed and paid clerical

assistance to do the manual work of my office, while I did the official work early in the morning, late at night, and when court adjourned for dinner, between 12 m. and 2 p. m.

PATRICK HENRY WINSTON, JR.,
Attorney at Law.

Mr. Winston defended Tom Hill at my request in the absence of the United States attorney, and did so faithfully.

CHAS. E. MONTEITH,
Judge, Nez Percés Agency.

*

LEWISTON, *August 11, 1886.*

THE PEOPLE }
vs.
TOM HILL. }

I appointed Mr. P. H. Winston to defend the defendant, Tom Hill. There was no attorney present to represent the defendant. Mr. Hawley, United States attorney, having been appointed by Government to defend him, was not present at the court in Idaho County, where the indictment was found, and Mr. Winston performed services of the greatest importance in getting a change of venue, and he ably defended him, assisted by the United States attorney, at his trial in Nez Perces County. He certainly earned a good fee.

NORMAN BUCK,
Judge trying the Case.

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AUGUSTUS G. RUGGLES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, a letter from the Third Auditor relative to the discrepancy between the amount of judgment in favor of Augustus G. Ruggles against the United States and the amount appropriated therefor in the deficiency appropriation act of August 4, 1886.

JANUARY 6, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 5, 1887.*

SIR: I have the honor to transmit herewith, for such action as Congress may deem necessary, copy of letter of the Third Auditor of the Treasury of the 21st ultimo, and its inclosure, relative to the discrepancy of \$2,000 existing in the amount of the judgment in favor of Augustus G. Ruggles for damages caused by improvements on the Fox and Wisconsin Rivers, as reported to Congress by the Attorney-General April 29, 1886 (House Ex. Doc. No. 207, Forty-ninth Congress, first session, page 5), and the amount appropriated therefor by the deficiency appropriation act of August 4, 1886 (24 Stat., page 283).

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
THIRD AUDITOR'S OFFICE,
WASHINGTON, D. C., *December 21, 1886.*

SIR: I invite attention to the provision in the deficiency act of August 4, 1886, making appropriation to pay a judgment, with interest, obtained by Augustus G. Ruggles against the United States for damages by flowage of his lands occasioned by the improvement of the Fox and Wisconsin Rivers. I inclose a copy of a special communication addressed by me to the Second Comptroller, on 10th instant, setting

out reasons why, at present, an account in his favor should be stated in the sum only of \$20,287.06, with interest, instead of \$22,287.06, with interest, the latter being the sum named in the act as the amount of his judgment.

The Comptroller concurred in the views suggested by me, and only the lesser sum (with interest) has been paid, leaving the question in respect to the residue (\$2,000, with interest thereon) to await some action by Congress.

Very respectfully,

JNO. S. WILLIAMS,
Auditor.

Hon. DANIEL MANNING,
Secretary of the Treasury.

TREASURY DEPARTMENT,
THIRD AUDITOR'S OFFICE,
Washington, D. C., December 10, 1886.

SIR: I have stated the account in favor of Augustus G. Ruggles in the sum of only \$20,287.06, with interest, although the act recites the amount of his judgment as \$22,287.06. But the act refers to the Attorney-General's report as the source of its information; and in that report the amount was stated as \$19,949.47 principal, and \$337.59 costs = \$20,287.06. In the print of the report (Ex. Doc. 207 page 5,) a small figure "2" was placed before the amount of costs, to call attention to foot note No. 2.

It may be that in drafting the act this figure was inadvertently added in the column of thousands, the discrepancy between the act and the report being exactly \$2,000. At all events, I think the accounting officers should delay any action in respect to this sum of \$2,000 until the attention of Congress can be invited to the matter, in order that the unintentional excess (if such it be) may be repealed, or that, if the larger sum was actually intended, some legislative declaration may relieve the matter from doubt.

Very respectfully,

JNO. S. WILLIAMS,
Auditor.

To Hon. SECOND COMPTROLLER.

○

STATISTICS RELATING TO SURGICAL OPERATIONS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With a letter from the Secretary of the Interior, an estimate by the Commissioner of Pensions of an appropriation for the collection of statistics relative to the influence of surgical operations.

JANUARY 6, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 5, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of letter of the Secretary of the Interior of the 27th ultimo, submitting an estimate by the Commissioner of Pensions for an appropriation of \$2,000 for the collection of statistics relative to the ultimate influence of surgical operations upon the nervous system, the circulatory system, and nutrition.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 27, 1886.

SIR: I have the honor to transmit herewith a communication from the Commissioner of Pensions, dated the 23d instant, inclosing a letter from the medical referee of the Pension Office, dated the 17th instant, and requesting an appropriation of \$2,000 for the ensuing year to enable his office to collect statistics relative to the ultimate influence of surgical operations upon the nervous system, the circulatory system, and nutrition, and recommend that the same be forwarded to Congress for appropriate action.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
PENSION OFFICE,
Washington, D. C., December 23, 1886.

SIR: I have the honor to forward herewith a communication received from the medical referee of this office, asking that means be taken to obtain for him authority for the collection of statistics upon the matters embraced in his communication. It will be observed that the statistics which the medical referee proposes to collate have their records in this Bureau. They are accessible to the medical profession only through this Bureau. The work is intended to present the physiological results of amputations, exsections, and resections from the date of the operation to the date of death. It has this practical bearing: It will show the influence upon human life of the results of the operations of exsections, resections, &c., and will tend to demonstrate which of these operations, when either can be performed, will best conduce to life and longevity. The practical operation of these researches in the affairs of this Bureau will arise mostly in connection with widows' cases, as determining the cause of death, in many instances exceedingly obscure. If, from a consideration of the whole field of amputations, exsections, and resections, a reasonable rule could be adduced for the enlightenment of the medical division of this office, it would be of great value to the Government and to the class of claimants immediately concerned.

I have the honor to recommend that an appropriation, not to exceed \$2,000 for the ensuing year, be made, to enable the medical referee to carry on the investigation indicated in his communication; and I respectfully request that this be transmitted to Congress through the usual channels.

Very respectfully,

JOHN C. BLACK,
Commissioner.

Hon. L. Q. C. LAMAR,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR, PENSION OFFICE,
Washington, D. C., December 17, 1886.

SIR: In view of the fact that medical literature is very deficient in respect to the ultimate influence of surgical operations upon the nervous system, the circulatory system, and nutrition, scientific investigation of these results is a matter of very great importance not only to the medical profession, but to mankind at large.

In view also of the important fact that, arising out of the greatest war record and the operations of the most magnificent armies the world has produced, the archives of the Pension Office afford the widest field of observation hitherto presented, and as it is even now becoming less extended by the passing away of our maimed veterans, the preparation of the material thus afforded for practical uses should no longer be delayed.

Here we have in round numbers 10,000 men who have been the subjects of amputation of some important member of the body. The number of resections, an operation more interesting in a scientific point of view because comparatively, with amputation, of recent introduction, and as preserving the limb in a partially useful state instead of causing its total loss, of greater interest to the unfortunate who may chance to fall into the hands of the surgeon for either the one or the other, is very large.

The medical and surgical records of the war are certainly of very great value, but, relating almost exclusively to first consequences, should be supplemented by careful collection and collation of all the statistics and data which can be gathered from the yet surviving subjects.

It is believed that from this immense mass of material, only accessible through the Pension Office, many important theories may be demonstrated—the advantages or disadvantages of particular surgical operations, their physiological and pathological results, their influence on the duration of life, influence as factors in the cause of

death, &c—and it is reasonable to suppose that some important principles can be demonstrated and conclusions reached for practical application in the operation of this office in carrying out the provisions of the pension laws.

To carry out this scheme in a manner which will yield results to compensate for the time and labor employed, each of these maimed veterans should be subjected to the most careful and critical examination (voluntary on their part) with a view to the scientific aspects of the operation of which he has been the subject.

It will involve much time and labor, but I believe it can be done without loss of time from the regular work and without extra cost, if only a small appropriation could be made by Congress to defray the expense of printing, stationery, postage, &c., for the purpose.

I therefore respectfully ask you to request this much from the Appropriation Committee of Congress, or that the machinery of the Pension Office may be used for that purpose to the extent necessary.

Very respectfully,

JOHN CAMPBELL,
Medical Referee.

Hon. JOHN C. BLACK,
Commissioner of Pensions.

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WAR DEPARTMENT CONTRACTS.

L E T T E R

FROM

THE SECRETARY OF WAR,

TRANSMITTING

*A statement of contracts made by the War Department and its bureaus
for the fiscal year ended June 30, 1886.*

JANUARY 7, 1887.—Referred to the Committee on Expenditures in the War Department and ordered to be printed, and the accompanying papers referred to the said committee.

WAR DEPARTMENT,
Washington City, January 5, 1887.

The Secretary of War has the honor to transmit herewith for the information of Congress, in compliance with section 229 of the Revised Statutes, statements showing the contracts made by the War Department and its bureaus during the fiscal year ending June 30, 1886.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

○

SURVEYS OF WISCONSIN RIVER.

L E T T E R

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, a report from the Board of Engineers upon the examination and surveys of Wisconsin River from Portage to its mouth.

JANUARY 7, 1887.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 5, 1887.

In compliance with the requirements of the river and harbor act of August 5, 1886, the Secretary of War has the honor to transmit to Congress a letter from the Chief of Engineers of the 30th ultimo, together with a copy of the report of the Board of Engineers for Fortifications and for River and Harbor Improvements, upon the examinations and surveys of the Wisconsin River from Portage to its mouth, giving the results of the investigations that have been in progress to determine the practicability of securing a sufficient low-water navigable depth in that river by works of contraction in its bed; and also a copy of a report from Capt. W. L. Marshall, Corps of Engineers, in charge of the improvement of that river.

It will be observed that, in the opinion of the Board, the results of these investigations are decisive against the application of this mode of improvement to the Wisconsin River, and in consequence it recommends that no more money be expended upon dikes and wing-dams in the bed of the river.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 30, 1886.

SIR: The river and harbor act of August 5, 1886, in making appropriation for the improvement of Fox River, directs the Secretary of War "to have the examination and survey of the Wisconsin River from Portage to the mouth, now being made by a Board of Engineers, completed as soon as practicable, and a report thereof made on or before the meeting of the next Congress."

In compliance therewith I have the honor to submit, for transmission to Congress as required, a copy of the report of the Board of Engineers above referred to upon the examinations and surveys in question, giving the results of the investigations that have been in progress, for some time past, to determine the practicability of securing a sufficient low-water navigable depth in Wisconsin River by works of contraction in its bed; and also a copy of a report from Capt. W. L. Marshall, Corps of Engineers, in charge of this improvement, to which reference is made in the above report of the Board.

It will be seen that, in the judgment of the Board, the results of these investigations are decisive against the application of this mode of improvement to the Wisconsin, its high slope causing velocities too great for control, in a navigable channel, through its bed of shifting sand. In consequence it recommends that no more money be expended upon dikes and wing-dams in the bed of the river. If a navigable route carrying 4 or 5 feet of water from Portage to the Mississippi is still required by the needs of commerce, recourse must be had to a canal.

Very respectfully, your obedient servant,

Hon. WM. C. ENDICOTT,
Secretary of War.

J. C. DUANE,
Brig. Gen., Chief of Engineers.

REPORT OF THE BOARD OF ENGINEERS.

OFFICE OF THE BOARD OF ENGINEERS FOR FORTIFICATIONS
AND FOR RIVER AND HARBOR IMPROVEMENTS,
New York, December 14, 1886.

GENERAL: The Board of Engineers has the honor to submit the following report upon the experiment which has been in progress upon the Wisconsin River since 1880, to determine the practicability of contracting that river sufficiently to give a low-water navigable depth of 4 or 5 feet by means of low brush-dikes and wing-dams in the bed of the stream. This report is in response to the call in the river and harbor act of Congress, approved August 5, 1886, and transmitted to the Board by letter of the Chief of Engineers dated August 12, 1886.

The history of the work upon the Wisconsin is briefly as follows:

Congress, by act approved June 23, 1866, provided for an examination and survey of the river with a view to making it a part of a water communication between the Mississippi and the Great Lakes. The work was assigned to General Warren, and a detailed survey (119 miles) was made in 1867. In his Annual Report for 1867-'68 he indicated that a canal for a part or the whole of the distance along the valley would be the most reliable method of improvement. In his next Annual Report he recommended that \$100,000 be appropriated for making wing-dams. His proposed application of the appropriation is given in his report contained in the Report of the Chief of Engineers for 1870, page 226, concluding as follows:

The next piece of work I would do would be to attempt to make a suitable navigation in the part of the river at the three places where the canal navigation was planned to cross it. The success attending the works at these points would demonstrate the possibility or not of improving the whole river in the same way at a less expense than to make a canal. If there should be a complete failure at these points, it would show not only that the river itself could not be improved, but that the canal proper must be so altered as not to depend on crossing the river.

Congress, by act of July 7, 1870, authorized the Secretary of War to "adopt for the improvement of the navigation of the Wisconsin River

such plan as may be recommended by the Chief of the Bureau of Engineers," and on July 11, 1870, appropriated \$100,000 "for the improvement of the Wisconsin River."

General Warren's health having failed, the charge of the work was transferred to Colonel Houston. Operations were commenced July 1, 1871, having for their object to determine the practicability of securing by dikes and dams a navigable depth of 5 feet, especially at the proposed canal crossings.

It is not necessary to recapitulate in detail the annual progress of the improvement, which is fully set forth in the reports of the Chief of Engineers. The following extract from Colonel Houston's annual report (Report of the Chief of Engineers for 1880, page 1948) defines in brief its general plan and history:

The plan thus far pursued has been to improve the natural channel of the river by reducing its width so as to increase the depth by concentrating the force of the current in a narrower channel. The bed of the river being sand, it yields readily to this increased force. The natural channel of the river is divided by numerous islands, and in carrying out the plan the object has been, first, to confine the river to a single channel and then to gradually reduce its width until the required depth should be attained. This system was carried out up to 1875, when, owing to expressions of dissatisfaction as to the results and progress of the work, operations were confined to short sections of the river looking to its contraction to the width necessary to produce the required depth. Work was directed to this end during the season of 1875.

In 1876 no appropriation was made until August 14, and the funds available were necessary to carry on the works which had been commenced on the Fox River, and from their character could not be stopped without great loss; consequently work was suspended on the Wisconsin. In 1877 no appropriation was made for rivers and harbors. No work was done on the river in 1876 and 1877. In 1878, after the passage of the appropriation of June 18, work was resumed on the Wisconsin, and has since consisted principally in repairs of dams and protections of the shore from the abrading action of the current.

The total amount of work done on the river up to June 30, 1880, is as follows:

One hundred and fifty-seven dams; total length, 76,684 feet.

Six shore protections; total length, 5,714 feet.

Fifteen hundred and twenty-three snags removed.

Seventy-three hundred and thirty-two leaning trees felled.

This work is in two sections: First, from Portage to Prairie du Sac; second, from Lone Rock to Boscobel, a total distance of 50 miles.

In 1879 the subject of the improvement of the Wisconsin River was referred to the Board of Engineers for report. Its conclusions, after a study of all available data and a personal inspection of the river below Portage, were:

The works for the improvement of the river, although ameliorating the navigable draught wherever these have been applied, have not been sufficiently decisive in results to enable the Board to recommend their application to the whole length of the channel without the aid of further information.

We think, therefore, that the section of the river already partially operated upon, from Portage for a length of about 12 miles, should receive additional wing-dams, and the width of the low-water channel should be contracted to 300 feet.

As this section has a slope somewhat exceeding the average, we think the results will be decisive, and if the channel be improved, for a reasonable amount, to an adequate depth, the application of the same system to the rest of the river could be confidently recommended.

While these works are under construction frequent gaugings should be made to determine the volume passing through the channel at different stages, say at Portage, Dekorra, and Skinner's Bluffs. Also frequent soundings in the deepest part of the channel should be made through the improved section, with such angular measurements as will enable the track followed by the boat to be laid down in each case upon the map. These soundings should be referred to an absolute datum, by benches carefully established.

The estimated cost of the work now proposed is \$80,000.

These recommendations were in part carried out, and the subject, with the data obtained, was again referred to the Board in 1883. The fol-

lowing extracts from its report (Report of Chief of Engineers for 1884, page 1900) convey the more important conclusions reached :

By calculations based upon these observations it appears that the water plane corresponding to the same discharge as when the water stood at zero of Warren's gauge, at Portage in 1867, has been continually falling, so that it stood at the following readings on that gauge: In 1879, at $-0'.445$; 1881, at $-0'.87$, and in 1882, at $-1'.0$.

The navigable depth in a section from Portage to Dekorra of 7 miles in length was found after reduction to be 2.88 feet, at a stage of water 1.3 feet in 1882, below the zero of Warren's gauge at Portage.

The increase of navigable depth since 1867, caused by the construction of wing-dams in the same section, is 1.78 feet.

That to obtain a navigable depth of 4 feet at all stages it would appear from calculation to be necessary to contract the river to a width of about 150 feet at Portage, and about 300 feet near the mouth at Bridgeport.

But as the results above were deduced from the observations furnished, which in the opinion of the Board were not sufficient, and their value even was in doubt from having been made during and too soon after the construction of the wing-dams, these results are not considered as sufficiently reliable to determine the utility of the works constructed and proposed.

To have insured reliable results, not only should the corresponding low-water levels at Portage and Dekorra with differences of level have been accurately known, but the Board should also have been furnished with observations sufficient to fix the low-water levels and differences of level at intermediate places, so as to have determined sufficient points of reference for the reduction of soundings; which precautions for accuracy are of additional importance where the range of improvement is limited and the weight of small errors thereby greatly enhanced.

Observations upon the water volume should preferably be taken at and near the stage corresponding to the discharge at Portage of 2,114 cubic feet, and a survey with soundings sufficient to construct accurate cross-sections should be made at and near the same stage of water.

Whatever may be the practical benefits to navigation of this improvement there is no doubt that the results should be recorded, with the attendant circumstances, for future instruction in like cases.

Approving this report, the Chief of Engineers suspended all work on the Wisconsin except needed repairs and the making of the observations suggested by the Board.

The season of 1885 was unfavorable to obtaining the desired data, but the past season, being an exceptionally low-water year, has been favorable, and the report now under consideration from Captain Marshall, who succeeded to the charge of the work in 1884, affords sufficient data for deciding upon the degree of success of the experiment.

Captain Marshall's report covers the ground so fully and concisely that no further analysis of the data is necessary here. It appears that for the improved section from Portage to Dekorra, a distance of about 7 miles, where the low-water discharge is now confined to a width of 300 feet by wing-dams, (1) that the gradual lowering of the water plane noted during the progress of the works has ceased since their completion in 1882; it now aggregates about nine-tenths of a foot; (2) that the mean depth, corresponding to a discharge at Portage of 3,360 cubic feet per second, is now about 1.8 feet more than in 1867 and about nine-tenths of a foot less than in 1882; (3) that the improved channel is narrow and tortuous, and is subject to continual variation in the number and length of its bars; (4) that the improved channel at the ordinary low-water stage is a succession of pools and rapids with a slope varying from 0.32 feet to 2.82 feet per mile; (5) that a water surface 2 feet above ordinary low water is required to give a navigable depth of 4 feet on the worst bars throughout the improved section; and that there were 46 days in 1882, 34 days in 1883, 37 days in 1884, 63 days in 1885, and 91 days in 1886 when the river was below that stage; (6) that the annual cost of keeping the dams in repair has averaged \$585 per mile of channel since their completion. They still remain in fair condition, but have settled somewhat from the decay and breaking of the brush composing

them. Should the whole river from Portage to the Mississippi be improved upon this system, an annual expenditure of about \$70,000 would be required for ordinary maintenance, in addition to occasional outlays for renewing crests destroyed by alternate exposure to air and moisture.

These facts, in the judgment of the Board, are decisive against the application of this mode of improvement to the Wisconsin. Its high slope (18 inches per mile) causes velocities too great for control in a navigable channel through its bed of shifting sand.

The data already obtained in this experiment are exceedingly valuable in their bearing upon the improvement of other similar rivers, of which there are many in the United States, and the Board recommends that occasional examinations of the improved section be made to detect future changes; but that no more money be expended upon dikes and wing-dams in the bed of the Wisconsin River. If a navigable route carrying 4 or 5 feet of water from Portage to the Mississippi is still required by the needs of commerce, recourse must be had to a canal. General Warren's estimate (made eleven years ago) for a 4-foot navigation was \$4,000,000, and for 5-foot navigation \$4,165,000 with an annual cost of maintenance of \$50,000.

As to the practical importance of a through route by way of the Fox and Wisconsin rivers, great changes have occurred during the past twenty years. Railroads have multiplied, and by sharp competition between themselves may maintain rates at so low figures that it is very doubtful if an ordinary canal can compete with them so as to materially reduce rates over a route so unfavorable as that from Green Bay to the Mississippi. This change in the practical importance of the problem cannot be ignored, and the Board would refer to Colonel Houston's discussion in his report of October 16, 1883 (report to the Chief of Engineers for 1884, page 1925), and to Captain Marshall's remarks in his present report. The Board concurs with these officers in the views therein expressed. At any rate, action should be delayed until the limit of practical improvement in the low-water navigation of the Mississippi from Saint Paul downward has been determined. That limit will fix the depth demanded in a canal traversing the valley of the Wisconsin.

The papers referred to the Board in this connection are herewith returned.

Respectfully submitted.

THOS. LINCOLN CASEY,
Colonel Corps of Engineers.

HENRY L. ABBOT,
Colonel of Engineers, Bvt. Brig. Gen.

C. B. COMSTOCK,
Lieut. Col. of Engineers and Bvt. Brig. Gen.

D. C. HOUSTON,
Lieut. Col. of Engineers.

WALTER MCFARLAND,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF CAPTAIN W. L. MARSHALL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Milwaukee, Wis., November 17, 1886.

SIR: I have the honor to submit the following memoir upon the results of the observations taken upon the Wisconsin River in 1885 and

1886, as required by the Board of Engineers for Fortifications and River and Harbor Improvements:

The observations consisted of discharge observations at Portage; below mouth of Baraboo River; at Rocky Run, and at Dekorra, Wis.; gauge readings at the same stations, and longitudinal and sectional soundings at about the lowest stages reached by the river. The discharge observations at the three lower stations, in 1885, as stated in my letter transmitting the observations and computations, are evidently unreliable, on account of the defective sections taken at these points. In 1886 the observations were satisfactory at all the stations, and were secured at the low-water stage, except at Rocky Run, which gauging station was omitted in 1886.

The discharges were measured with rod-floats $2\frac{1}{2}$ inches in diameter, loaded to maintain a vertical position; with double floats; and with a new Price's current meter properly rated, run at mid-depth. The mid-depth-observations were reduced by the method given in Professional Papers, Corps of Engineers, No. 12. The rod-float observations were reduced by Francis' formula.

For the purpose of comparison with the results given in the report of the Board of Engineers for Fortifications, January 5, 1884, published in the Report of the Chief of Engineers for 1884, pages 1900-1917, the observations at Portage and the channel soundings have been taken and reduced in the manner indicated in that report, and the results tabulated herein, from which the changes in the regimen of the river since 1882 may be deduced by the Board.

The observations taken at the stations below Portage even in 1886 were not used in making the reduction for comparison with the former results obtained by the Board, it having been considered better to follow exactly the same treatment in every case. The observations at these stations taken in 1886 at low water are, however, submitted herewith in order that the Board may consider them if thought necessary.

The computations in the tables herewith were made by First Lieut. Graham D. Fitch, Corps of Engineers, under my direction.

Variation in discharge for a rise or fall of one-tenth of a foot at Portage, 1885.

Discharge (means of all observed at each reading).	Reading of gauge.	Differences from mean—		Variation in dis- charge for one-tenth foot in gauge.	V.	V ² .
		In dis- charge.	In gauge reading.			
		<i>Cu. feet.</i>	<i>Feet.</i>			
4641	0.58	680	0.468	145.3	27.3	745.29
4230	0.33	269	0.218	123.4	49.2	2420.64
4233	0.20	272	0.188	144.2	28.4	806.56
3916	0.10	45	0.012	375.05	202.4	40965.76
4052	0.15	91	0.038	239.0	66.4	4408.96
4023	0.20	62	0.088	70.4	102.2	10444.84
3989	0.12	28	0.008	350.05	177.4	21470.76
3827	0.00	134	0.112	119.6	53.0	2809.00
3812	0.03	144	0.082	181.7	9.1	82.81
3786	0.00	175	0.112	156.2	16.4	268.96
3719	-0.07	242	0.182	132.9	39.7	1576.09
3592	-0.10	369	0.212	174.0	1.4	1.96
3821	-0.05	140	0.162	86.4	86.2	7430.44
3806	-0.02	155	0.132	118.2	54.4	2959.36

Sum	55447	1.57	2416.3	13)106391.43
Mean	3961	0.112	172.6 (1)	$e^2 = 8183.96$
	55447	1.57	2416.3	$k^2 = 4.173$
	-3916	-.10	-375.0	$e^2 k^2 = 34151.6651$
	-3989	-.12	-350.0 (2)	$ek = 184.801$
	12)47542	12)1.35	12)1691.3	$e^2 = 8183.96$
	3961.8	.113	140.3 c. ft.	$k^2 = 3.03$
				$e^2 k^2 = 14797.3983$
				$ek = 157.47$

The application of Peirce's criterion as above rejects the fourth and seventh observations, and there results from the above observations 140.3 cubic feet per second as the variation in discharge for a rise or fall of one-tenth of a foot, and we also see that a discharge of 3,961.8 cubic feet per second corresponds to a reading of 0.113 foot on the Portage gauge.

The discharge at a reading of zero on the Portage gauge is, therefore, $3,961.8 - (140.3 \times 1.13) = 3,803.3$ cubic feet.

Since, however, the zero of the gauge at Portage is 0.318 foot above the zero of Warren's gauge, the discharge in 1885 at the zero of Warren's gauge was $3,803.3$ cubic feet $-(140.3 \times 3.18) = 3,357.1$ cubic feet per second.

The corresponding discharge in 1867 was 2,114 cubic feet, as estimated by the Board of Engineers, hence the discharge at zero in 1885, as compared with 1867, has increased $3,357.1 - 2,114 = 1,243$ cubic feet per second, or the water plane has been lowered—

$$\frac{1243}{140.3 \times 10} = 0.888.$$

Variations in discharge for a rise or fall of one-tenth of a foot at Portage, 1886.

Discharges, 1886.	Reading of Portage gauge.	Difference from mean—		Variation in discharge for 0.1 rise or fall.	V.	V ² .
		In dis- charge.	In gauge reading.			
2849	-0.30	357	0.48	74.4	26.9	723.61
3059	-0.20	567	0.58	97.8	3.5	12.25
3126	-0.13	634	0.65	97.5	3.8	14.44
2912	-0.30	420	0.48	87.5	13.8	190.44
2980	-0.33	488	0.45	108.5	7.2	51.84
2730	-0.47	238	0.31	76.8	24.5	600.25
2706	-0.57	214	0.21	101.9	0.6	0.36
2568	-0.73	76	0.05	152.0	50.7	2570.49
2439	-0.78	53	0.00	0.0		
2434	-0.85	58	0.07	82.9	18.4	338.56
2343	-0.89	149	0.11	135.5	34.2	1169.64
2317	-0.90	175	0.12	145.8	44.5	1980.25
2312	-0.94	180	0.16	112.5	11.2	125.44
2316	-0.91	176	0.13	135.4	34.1	1162.81
2315	-0.94	177	0.16	110.6	9.3	86.49
2220	-0.06	272	0.28	97.1	4.2	17.64
2179	-1.16	313	0.38	81.8	19.5	380.25
2165	-1.18	327	0.40	81.8	19.5	380.25
2123	-1.22	369	0.44	83.9	17.4	302.76
2089	-1.29	403	0.51	79.0	22.3	497.29
2146	-1.20	346	0.42	82.4	18.9	357.21
21)52328	21)16.35	.....	.....	20)2025.1	.....	19)10962.27
2492.	-0.78	.....	.....	101.3	.....	= 576.96
52328	16.35	.....	.....	.....	.....	k ² = 4.878
-2439	-0.78	.....	.....	.....	.....	e ² k ² =2814.4109
20)49889	20)15.57	.....	.....	.....	.....	ek= 53.05
2494.5	-0.78	.....	.....	.....	.....	.....

Rejecting the ninth observation there results from the above observations 101.3 cubic feet per second as the variation in discharge for a rise or fall of one-tenth of a foot in 1886, and we also see that a discharge of 2,494.5 cubic feet per second corresponds to a reading of -0.78 on the Portage gauge,

The discharge in 1886 at a reading of zero on the Portage gauge is, therefore, $2494.5 + (101.3 \times 7.8) = 3284.64$. Since, however, the zero of the gauge at Portage is 0'.318 above the zero of Warren's gauge, the discharge in 1886 at the zero of Warren's gauge becomes $3,284'.64 - (101.3 \times 3.18) = 2,962.5$ cubic feet per second.

The corresponding discharge in 1867 was 2,114 cubic feet, as estimated by the Board of Engineers; hence the discharge at zero in 1886 as compared with 1867 has increased $2,962.5 - 2,114 = 848.5$ cubic feet per second, or the water plane has been lowered—

$$\frac{848'.5}{101'.3 \times 10} = 0'.837.$$

The lowering of the water plane below Warren's zero of 1867, as determined by the Board of Engineers, was 0.445 foot in 1879; 0.61 foot in 1880; 0.87 foot in 1881, and 1.0 foot in 1882.

These figures should be reduced 0.118 foot, due to an erroneously taken level for the zero of the present gauge, which is 0.318 foot above Warren's zero instead of 0.2 foot, as taken by the Board.

Applying this correction to the determinations of 1882 gives for that year's zero -0.882 foot. In 1885 the zero was -0.888 foot, and in 1886 -0.837 foot, showing that there has been no further lowering of the low-water plane since 1882.

Warren's gauge in 1867, when the discharge was 3,360 cubic feet per second, stood at 0.6 foot. In 1885 for a discharge of 3,360 cubic feet per second the reading on Warren's gauge would be—

$$\frac{3360' - 3357'.1}{140'.3 \times 10} = 0'.002.$$

Soundings were taken in 1885 at a reading -0.1 foot on the Portage gauge, or 0.218 foot on Warren's gauge; hence the correction to be applied to the soundings in 1885 to reduce them to discharge of 3,360 cubic feet per second is $-0'.218 + .002 = -0'.216$. In 1886 for a discharge of 3,360 cubic feet per second the reading on Warren's gauge would be—

$$\frac{3360 - 2962'.5}{101'.3 \times 10} = 0'.39.$$

Soundings were taken in 1886 at a reading of -1.21 feet on the Portage gauge, or -0.892 foot on Warren's gauge; hence the correction to be applied to the soundings in 1886 to reduce them to a discharge of 3,360 cubic feet per second is $0'.39 + 0'.892 = +1'.282$.

Applying the corrections above determined, viz., $-.216$ to the 1885 soundings, and $+1.282$ feet to the 1886 soundings, in the best channel from Portage to a point 4 miles below, and placing the results in the table already published in the last report of the Board of Engineers, we obtain the following comparative results:

TABLE OF MEAN DEPTHS, AT A DISCHARGE OF 3,360 CUBIC FEET PER SECOND AT PORTAGE.

	Feet.
Warren's survey, 1867	4.22
Houston's survey:	
August 25, 1881	6.52
August 28, 1882	6.89
September 22, 1882	6.96
Marshall's survey:	
October 15, 1885	6.098
August 10, 1886	6.077

Showing a diminution of mean depth in 1885 and 1886 over 1882 of about 0.9 foot, and an increase over 1867 of *about* 1.8 foot in mean depth.

Lengths and depths of pools and bars, at a discharge of 3,360 cubic feet per second at Portage, from Portage to a point 4 miles below.

	Pools.		Bars.		
	Length.	Depth.	Length.	Depth.	Num. ber.
Warren's survey, 1867.....	7,390	6.08	15,410	3.63	14
Houston's survey:					
August, 1881.....	19,400	6.89	3,280	4.319	14
August, 1882.....	20,585	7.11	1,785	4.377	8
September, 1882.....	20,460	7.218	2,200	4.624	11
Marshall's survey:					
October, 1885.....	16,370	6.588	4,750	4.409	17
August, 1886.....	18,860	6.268	2,260	4.484	8

The calculations of mean depths was made by adding the products in each case of the lengths of the corresponding bars and pools by the respective depths, and dividing by the sum of the lengths of the bars and pools.

The terms "bars" and "pools" correspond to depths, respectively, greater and less than 5 feet.

DEPTHS AVAILABLE FOR NAVIGATION.

To the results given in the last report of the Board of Engineers, I have added the soundings given by the surveys of October, 1885, and August, 1886, for a distance of 30,100 feet from Portage toward Dekorra, using the same method of reducing to what the Board terms *ordinary low water*, as indicated in their report. This stage, however, corresponding to 2,114 cubic feet discharge, is but seldom reached, or is not *ordinary low-water* stage. During the season of 1886, however, due to a prolonged drought, the river attained a slightly lower stage than this, and this low stage, therefore, should be considered.

Table of mean-soundings upon bars, reduced to ordinary low water.

	Warren, 1867.	Houston.						Marshall.	
		August 23, 1881.	June 23, 1882.	August 23, 1882	September 22, 1882.	November 6, 1882.	September 14, 1883.	October 15, 1885.	August 10, 1886.
	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>	<i>Feet.</i>
Mean of sounding less than 4 feet	2.762	3.13	2.854	3.356	3.54	3.043	3.51	3.45	3.37
Least sounding.....	1.4	2.13	0.5	2.7	3.15	1.65	2.65	2.5	2.21
Reading on Warren's gauge.....	0.7	0.1	2.5	0.4	-0.15	2.45	0.05	0.218	-0.892
Calculated reading Warren's gauge of low-water plane	0.0	-0.87	-1.0	-1.0	-1.0	-1.0	-1.1	-.888	-0.837
Reduction to ordinary low water	0.7	0.97	3.5	1.4	0.85	3.45	1.15	1.106	-0.055

From Fortage to Dekorra, 6 miles.

	Number of bars.	Length of bars.
Warren, 1867.....	20	17, 530
Houston:		
August 23, 1881.....	24	6, 570
June 23, 1882.....	23	12, 930
August 28, 1882.....	16	3, 720
September 22, 1882.....	21	4, 100
November 6, 1882.....	25	6, 640
September 14, 1883.....	28	4, 980
Marshall:		
October 15, 1885.....	37	8, 135
August, 1886.....	15	3, 610

From the above table it may be seen that since August, 1881, both the number of bars and their length have increased in 1885. The effect of increasing the number of alternate contractions and expansions in width by the addition of wing-dams not continuous, is to increase the *number* of bars and pools; to diminish the depths of pools and, if the dams are sufficiently numerous, either to increase the depth on bars or to lower the water plane, or both.

In 1886 the cause of the apparent diminution in lengths and number of bars is evident by looking at the maps of the surveys. The bars are not at ordinary stages reduced in number, but as the water declines these dams have been cut through at the points of least resistance, furnishing an apparent channel-way, very narrow and tortuous, almost impossible for a boat to follow. The improvement, therefore, in the comparative number and lengths of bars in 1886 over 1885 is only an apparent and not a real one. These elements are now about the same as shown by the survey of August, 1882.

The continual variation in the number and lengths of bars is a bad feature of the river, regarded as a channel for navigation, showing the instability of its channel and regimen, due the shifting sand-bars. The channel can never reach a position of even approximately stable equilibrium as long as there are moving sands and alterations in width of channel.

The calculations for finding the comparative mean depths of the river, corrected for filling, in 1885 and in 1886 have been made, and the results added to the table on page 1910 of the last report of the Board of Engineers, with the results shown in the last columns of the table below:

Table of corrected mean depths at ordinary low water, and at 0.3 below this stage.

	Date of survey.								
	1867.	Aug. 25, 1881.	June 23, 1882.	Aug. 23, 1882.	Sept. 22, 1882.	Nov. 6, 1882.	Sept. 14, 1883.	Oct. 15, 1885.	Aug. 10, 1886.
Gauge reading (Warren's)	0.7	0.1	2.5	0.4	--0.15	2.45	0.05	0.218	-0.892
Gauge readings, ordinary low water	0.0	-0.87	-1.0	-1.0	-1.0	-1.0	-1.0	-0.888	-0.837
Mean at actual soundings {	3.462	4.1 3.462	6.354 3.462	4.756 3.462	4.39 3.462	6.493 3.462	4.66 3.462	4.548 3.462	3.36 3.462
Rise of water above 1867. {	-----	0.638 .270	2.892 2.890	1.294 0.700	0.928 0.150	3.031 2.750	1.198 0.450	1.186 0.406	-0.102 -0.755
Increase of depth since 1867	-----	0.368	0.092	0.594	0.778	0.281	0.748	0.680	0.653
Correction for filling ..	0.00	0.050	0.5208	0.1302	0.0279	0.5115	0.083	0.074	-0.139
	0.00 3.462	0.418 3.462	0.6128 3.462	0.7242 3.462	0.8059 3.462	0.7925 3.462	0.831 3.462	0.754 3.462	0.514 3.462
Corrected	3.462 0.7	3.880 0.7	4.0748 0.7	4.1862 0.7	4.2679 0.7	4.2545 0.7	4.293 0.7	4.216 0.7	3.976 0.7
Mean at ordinary low water	2.762 0.3	3.180 0.3	3.3748 0.3	3.4862 0.3	3.5679 0.3	3.5545 0.3	3.5933 0.3	3.516 0.3	3.276 0.3
Mean depth at 0.3 be- low ordinary low water	2.46	2.88	3.075	3.186	3.27	3.25	3.29	3.216	2.976

Which, instead of an improvement in the mean depths since the last report, shows rather a deterioration in depth of about 0.3 foot, and an improvement over the unimproved river as shown by Warren's survey of about 0.5 foot.

In passing from the actual soundings which were made in 1886 at a stage 0.055 foot below the ordinary low water, *i. e.*, 2,114 cubic feet a second, discharge stage, to a stage of water corresponding to a discharge of 3,360 cubic feet per second for comparison with Warren's results in 1867, it was assumed that the water surfaces at the two stages of the river were parallel, and that the same corrections, +1.282 feet at Portage, would correctly apply to all the soundings. This is not correct, but the soundings were so reduced to make the results comparable with the results already published in the former report of the Board of Engineers.

Unfortunately, readings of the gauges at the gauging stations were not obtained at both stages of the river either in 1885 or 1886, but since the results show that there has been no further reduction of the low-water plane since 1882, nor much change in the stage corresponding to a discharge of 3,360 cubic feet at Portage during the past year, we may determine very closely the limits of the errors introduced into the results on page 8 of this report, by assuming that the slopes of the river were probably the same in 1885 and in 1886 at the same gauge-readings at Portage. In 1886 we have the levels of the water surfaces at Portage, Baraboo River, and Dekorra, at the stage the soundings were made, *i. e.*, at -1.21 foot on the Portage gauge, and in 1885 we have them at a stage 0.072 foot on the Portage gauge corresponding to the discharge 3,360 cubic feet per second in 1886.

The differences between the levels of these water surfaces will show the corrections to be applied to the soundings in the vicinity of these stations, at -1.21 feet on the Portage gauge, to reduce them to a stage 3,360 cubic feet per second discharge at Portage:

Year.		At Port- age.	Baraboo River.	Dekorra.
1886	Reference of water surface at reading —1.21 feet at Portage....	<i>Feet.</i> 21.618	<i>Feet.</i> 14.015	<i>Feet.</i> 9.95
1885	Same at reading 0.072 foot, Portage gauge corresponding to 3,360 cubic feet discharge	22.890	14.824	11.05
	Reduction.....	+1.282	+0.819	+1.10

Mean reduction = +1'.07.

The reduction actually applied to the soundings was +1.282 feet, hence the resulting depths of pools and bars in table on page 9 of this report may be in error to an extent equal to —0.21 foot, the depths therein given being probably too great by that amount. The error, then, if any, is *favorable* to the improvement.

LOW-WATER DISCHARGES AT THE MOUTH OF BARABOO RIVER AND AT DEKORRA.

The discharge observations at Baraboo River and at Dekorra, taken during the past season and submitted herewith, were reduced in the same manner as those at Portage, and there results therefrom the facts that the discharges at the stage corresponding to a discharge of 2,114 cubic feet per second at Portage are at the mouth of Baraboo River 2,447 cubic feet per second, and at Dekorra 2,489 cubic feet per second, or the low-water discharge of the Baraboo River is 333 cubic feet, and of Rocky Run and Duck Creek is 42 cubic feet per second.

The low-water surface at Dekorra corresponds to a reading 0.0 foot on the Dekorra gauge. The Baraboo gauge is a temporary one, but the low-water surface at the gauge in 1886 was 4.015 feet above the zero of the Dekorra gauge, and 4.315 feet below the upper miter sill of Portage Lock. The location of the gauge is shown on the map, which references are sufficient in the future to re-establish this gauge, or to compare water levels in the future.

EFFECTS OF LOWERING THE WATER PLANE.

On page — of this report it is stated that in 1885 the low-water plane was 0.888, and 0.837 foot lower in 1886 than in 1867. Applying these reductions to the gauge records at Portage for 1885 and 1886, and continuing the tables given in the last report of the Board of Engineers on pages 1906, 1907, Report of the Chief of Engineers for 1884, we get the results shown below:

Year.	Gauge record considered.	Extreme low water.	Depth 0 to extreme low water.	Depth 0 to 1 foot.	Depth 1 foot to 2 feet.	Depth 2 to 3 feet.	Depth 3 to 4 feet.	Depth 4 to 5 feet.	Depth 5 to 6 feet.	Depth 6 to 7 feet.	Depth 7 to 7.3 feet, inclusive.	Total days.
		<i>Feet.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	
1871	Aug. 28 to Oct. 5, incl.	0-0.1	39	39								39
1872	Apr. 10 to Nov. 9, incl.	0-0.2	42	81	30	39	17	5				214
1873	Apr. 1 to Nov. 18, incl.	0-0.4	9	105	34	33	31	16	4			232
1874	Apr. 17 to Nov. 20, incl.	0-0.4	44	52	72	25	23	2				218
1875	May 9 to Nov. 20, incl.	0-0.2	5	78	45	35	23	10				196
1876	Apr. 1 to Dec. 2, incl.	0-0.1	2	43	84	21	30	11	32	23		246
1877	Apr. 1 to Nov. 30, incl.	0-0.6	71	50	77	41	5					244
1878	Apr. 1 to Nov. 30, incl.	0-0.5	23	52	124	30	13	2				244
1879	Mar. 27 to Dec. 15, incl.	0-0.5	56	80	80	36	5	4	3			264
1880	Mar. 6 to Nov. 15, incl.	0.0		97	49	27	35	24	11	8	4	255
1881	Apr. 15 to Nov. 30, incl.	0-0.2	5	38	23	37	51	35	17	20	4	230
1882	Mar. 1 to Nov. 30, incl.	0-0.3	9	36	49	95	46	25	9	6		275
1883	Mar. 1 to Nov. 30, incl.	0.0		32	81	77	54	16	5	10		275
1884	Mar. 1 to Nov. 30, incl.	0-0.1	2	32	62	56	58	28	17	23	1	275
1885	Mar. 1 to Nov. 30, incl.	0-0.05		61	50	82	40	23	15	4		275
1886	Mar. 1 to Oct. 31, incl.	0-0.93	41	42	61	39	30	13	7	6	6	245

Table of extreme low waters, corrected for the lowering of the water plane.

Year.	Extreme low water in reference to the zero of Warren's gauge, 3 feet above miter-sill.	Extreme low water in reference to the calculated zero of the particular year.
	<i>Feet.</i>	
1871.....	0.1	For these years the record must remain unaltered, as no data exist for correction.
1872.....	-0.2	
1873.....	-0.4	
1874.....	-0.4	
1875.....	-0.2	
1876.....	-0.1	0'. 0
1877.....	-0.6	-0'. 4
1878.....	-0.5	-0'. 2
1879.....	-0.5	-0'. 055
1880.....	0.0	0'. 61
1881.....	-0.2	0'. 67
1882.....	-0.3	0'. 7
1883.....	-0.0	1'. 0
1884.....	-0.1	1'. 0
1885.....	-0.05	-0'. 93
1886.....	-0.91	-0'. 145

Table showing the duration of the stages of water at Portage in reference to the zero of the particular year.

	1867.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.
	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>
Between extreme low water and zero of the year.....	0	64	7	2	0	0	0	0	0	0	10
Between zero of the year and five-tenths of a foot above.....	4	22	23	61	0	0	0	0	0	0	21
Between zero of the year and 1 foot above.....	29	48	51	102	46	9	7	3	3	1	15
Between 1 foot and 2 feet.....	96	103	130	75	80	40	39	31	34	62	45
Between 2 feet and 3 feet.....	21	48	69	64	32	21	62	81	61	50	56
Between 3 feet and 4 feet.....	33	12	14	12	42	32	84	75	56	81	41
Between 4 feet and 5 feet.....	9	.....	4	3	30	38	42	54	53	40	27
Between 5 feet and 6 feet.....	30	.....	.....	6	13	27	28	16	26	23	12
Between 6 feet and 7 feet.....	28	.....	.....	.....	4	15	8	6	20	18	4
Between 7 feet and 8 feet.....	.....	.....	.....	.....	10	20	5	9	22	0	9
Number of days observed.....	246 <i>Feet.</i>	275 <i>Feet.</i>	275 <i>Feet.</i>	264 <i>Feet.</i>	257 <i>Feet.</i>	202 <i>Feet.</i>	275 <i>Feet.</i>	275 <i>Feet.</i>	275 <i>Feet.</i>	275 <i>Feet.</i>	245 <i>Feet.</i>
Lowest water in reference to zero of the year.....	0.0	-0.4	-0.2	-0.055	0.61	0.6	0.7	0.4	0.8	1.0	-0.145
Highest water in reference to zero of the year.....	6.65	3.45	4.35	5.945	7.91	8.07	7.2	7.5	8.0	7.3	8.8

NOTE.—Five days in 1886 when water was between 8 and 9 feet above zero of year.

By the phrase "zero of the particular year," used for this table, is meant the level of the water in that year, corresponding to the same discharge as when the water stood at zero at Warren's gauge in the years preceding the construction of the works of improvement.

From the table on page 11 of this report it will be seen that the improved section of the river in 1886 has a mean depth on bars at 0.3 foot below ordinary low water of 2.97 feet. In September, 1882, this mean depth was 3.27 feet, and in 1867, 2.46 feet. The above result was arrived at in 1886 by correcting for filling below 0.7 foot on Warren's gauge, corrected for lowering of the water plane, which correction amounted to - 0.14 foot. Omitting this correction the mean depth on bars in 1886 is 3.11 feet at a stage 0.3 foot below ordinary low water, which shows an improvement over the unimproved river in 1867 of about 0.65 foot, and a slight deterioration in depth since 1882.

The least depths on bars, at a stage 0.3 foot below ordinary low water, were in 1867, 1.10 feet, 1.20 feet, 1.80 feet, 2.10 feet, 2.10 feet, 2.10 feet, 2.20 feet, 2.20 feet, 2.20 feet, 2.3 feet, and in 1886, 2.15 feet, 2.65 feet, 1.95 feet, 3.25 feet, 2.95 feet, 3.15 feet, 2.35 feet, 2.85 feet, 2.20 feet, 2.20 feet, 2.60 feet, 2.30 feet, 2.0 feet, 2.0 feet.

Showing an improvement in 1886 over 1867 of about 0.85 foot in least depths.

It is also shown that in the present condition of the river it will require a rise of 2.05 feet above the ordinary low-water stage to give a navigable stage of 4 feet of water throughout the improved section over the bars of least depths. The table showing the duration of the stages of water at Portage given on page 14 of this report shows that there were 46 days in 1882, 34 in 1883, 37 in 1884, 63 in 1885, and 91 days in 1886, when there was a depth available for navigation less than 4 feet from Portage to Dekorra.

Upon consulting the map of the low-water survey of the Wisconsin, submitted with this report, it will be seen that the best channel is a mere thread of water, meandering in and out among the sand-bars and dams, with short and abrupt bends and crossings, which crookedness of channel, taken in connection with the shifting nature of the channel-way, and the current of the stream, make navigation for vessels of the length adapted to the locks on the Fox River nearly impossible, even if sufficient depth of channel existed.

As bearing upon the character of the river, and the navigability of the channel from Portage to Dekorra, some 22 slope gauges were established and read at low water for slope at low water of the water surface. These slopes for a stage corresponding to a reading — 1.21 feet on the Portage gauge, or — 0.055 foot below the ordinary low-water stage, at which the soundings were taken, are given in the following table:

Slope at low-water (—1.21 feet on Portage gauge).

No. of gauge.	Location.	Water surface.	Difference of level.	Distance between gauges.	Slope per mile.
		<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>
1	Portage Lock	21.608	.....	.....	.....
2	.....	21.533	0.075	350	1.131
3	.....	21.448	0.085	1,057	0.425
4	Fire Dock	21.001	0.447	1,570	1.503
5	.....	19.755	1.246	3,211	2.048
6	Wood's Island	19.243	0.512	2,458	1.100
7	Head of Wood's Slough	18.758	0.485	2,330	1.099
8	26	18.231	0.527	1,527	1.822
9	28	11.771	0.460	1,490	1.630
10	30	16.940	0.831	1,556	2.820
11	Harlet Island	16.783	0.157	1,480	0.660
12	Rattlesnake Island	16.358	0.425	2,180	1.029
13	.....	15.635	0.723	1,658	2.302
14	40	14.650	0.985	2,665	1.952
15	Above Baraboo River	14.064	0.586	1,910	1.620
16	Below Baraboo River	13.995	0.069	1,156	0.317
17	Head Pine Island	13.749	0.246	1,640	0.792
18	50	13.368	0.381	1,478	1.362
19	Pine Island	12.604	0.764	2,104	1.915
20	53	11.616	0.988	2,380	2.192
21	Above Rocky Run	10.166	1.450	2,777	2.760
22	Below Rocky Run	9.679	0.487	1,210	2.124

Slope per mile from Portage to gauge 15, Baraboo River, 4.818 miles, = 1.565 feet.

Slope per mile from gauge 15, Baraboo River, to gauge 22, Dekorra, 2.413 miles, = 1.811 feet.

From which it is apparent that the improved section is still a succession of pools and bars ponds and rapids, and that improvement of the river by eliminating the bars will result in diminishing the depths of the pools, and equalizing the slopes, and lowering the low-water plane, without necessarily materially increasing the depth of water in the channel, unless further contraction is resorted to.

It is my judgment that the degree of contraction already practiced on the Wisconsin River, viz, to 300 feet between the heads of the wing-dams, is as great as can be safely and economically done. Further contraction will produce dangerous scour, a lowering of the water plane, and injury to the angles and training-walls of the dams, from undermining. The dams would be, then, much more expensive and difficult to maintain on such insecure foundations. Besides this objection to further contraction, a narrow channel in a river with such a slope and current, and small depth, is in itself a cause of serious obstruction to ascending boats even when the depth is sufficient for the draught of

the boat, due the piling up of the water at the bow of the boat from the resistance by friction and insufficient water-way to its passage to fill the space behind, vacated by the boat in its progress. For even approximately free or easy navigation on shallow streams of such slope wide channels are necessary.

During the seasons of 1884 and 1885 it was found necessary to make repairs to the dams on the Wisconsin River to confine to the channel-way the discharge of the Wisconsin. These repairs were restricted to what were absolutely necessary to answer a special purpose, and with no view to anything more than temporary objects. The dams are in fair condition but have settled somewhat, and the crests are becoming lowered also from rot and breaking of the brush of which they are composed.

The annually recurring exposure of the crests of the dams to the air and moisture for months each year can but result in the necessity for replacing these crests with fresh material from time to time. The dams also are frequently cut away from the bank at their shore extremity at high water; but this kind of damage has not been as frequent as it would be expected, less than 10 per cent. of the dams having been injured in six years from this cause.

The expenditures for repairs on the 6 miles of dams were, in 1884.....	\$3,364 07
1885.....	3,663 34

Total for two years.....	7,027 41
--------------------------	----------

or \$585 per mile of channel per annum.

The same rate applied to the entire length of the river from Portage to Prairie du Chien would indicate an annual expense for maintenance of \$69,030. In addition, the crests of all the dams would probably have to be rebuilt once in about nine years, at an expense of about one-fifth of the original cost of the dams.

The present needs of commerce and navigation for this work are fully discussed by Col. D. C. Houston on pages 1925 to 1927, Report of the Chief of Engineers for 1884; and in his conclusions that the demands of commerce do not at present require the improvement of the Wisconsin River and the completion of the project, I concur.

As originally projected, even granting the practicability of improving at reasonable expense the open-river navigation of the Wisconsin River sufficiently to give 4 feet in depth of water from Portage City to the Mississippi River, which is extremely doubtful, it is my opinion that the Wisconsin River can never form part of a *cheap* or effective route of transportation compared with railroads, for the following reasons:

(1) The channels will necessarily, as shown herein, be so narrow and tortuous at low water, and so obstructed by submerged dams with water flowing over their crests at varying angles to the channel at medium stages, that free or easy navigation cannot be attained.

(2) That the depth of 4 feet is sufficient, especially when rapid currents are to be overcome by steam machinery, to enable sufficient loads to be carried on the decks or in the holds of steamboats of the size admitted by the locks on the Fox River, in addition to the machinery and fuel of the boat itself, at any rates of freight that can compete with present railroad rates and at a profit.

(3) Owing to the narrow, tortuous, and shifting channels, the rapid currents, and the submerged dams, the improved stream cannot be navigated with safety at night, nor can towing be done to advantage or at all at low water, especially up-stream or from the Mississippi River eastward, the direction of the heavier freights.

The competition of railroads has become so severe, their tracks and

rolling-stock are so much improved, that no 4-foot water-course can compete with them on advantageous terms except under the most favorable conditions as to moderate currents and commodious channels that offer facilities for towing. Even in wide channels of moderate depths, towing up-stream is not advantageously done against railroad competition when the currents exceed 4 feet per second, as they do on the Wisconsin River whenever the stream is sufficiently high to allow barges in tow drawing 4 feet of water or more to pass over the dams.

Owing, then, to the problematic character of this work, its great probable cost, the probable cost of maintaining a great development of brush-dams with their crests continually rotting away above the low-water marks, and the insufficient and difficult shifting channel-way when completed, it is my opinion that no further work should be done upon the Wisconsin River directed to securing an open-river channel in connection with the slackwater navigation on the Fox River for a through route of transportation.

If such a route is necessary, the project should embrace a certainly practicable solution of the problem, which can only be found in a canal from Portage to the Mississippi.

With reference to the work on the Fox River I have to refer to the report of a Board of Engineers convened in 1884 to consider its navigation, and to a modification of the project of that Board made by authority of the Chief of Engineers, as shown by my letter and indorsements thereon (copies of report, and letter and indorsements, herewith), dated April 30, 1886.

The work on the Fox River, therefore, at present is directed to the deepening and widening the channels of the Fox River and canals below Montello to 6 feet deep and 100 feet wide; to the rebuilding the Cedars Lock with stone, and to keeping in repair the old locks and other works on the Fox River. For completion of this work an estimate is made of \$602,000.

Financial statement to date.

Fox River, total expenditures.....	\$1, 876, 794 31
Wisconsin River, total expenditures.....	590, 075 84
Total	2, 466, 870 15

OPERATING AND CARE, ETC.

The estimates for the original work are all contained in the report of the Board of Engineers in 1884, and are not again repeated herein.

There are submitted herewith—

1. A map of the Wisconsin River from Portage to Dekorra, survey at low water, 1886, in two sheets.
2. Gaugings of the Wisconsin River at Portage; below mouth of Baraboo River, and at Dekorra, computation sheets.
3. Gauge reading, at Portage, Baraboo, and Dekorra, and intermediate gauges, July and August, 1886.
4. Summary of the discharge observations.
5. Readings of slope gauges No. 1 to No. 22, 1886.
6. Copy of letter and indorsements modifying project of Board of Engineers, submitted September 17, 1884.

Very respectfully, your obedient servant,

W. L. MARSHALL,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

H. Ex. 65—2

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$\frac{3.7}{130'}$	$\frac{2.2}{2170'}$	$\frac{2.1}{2.9}$	$\frac{2.9}{2.9}$	- 3.5	
		$\frac{3.3}{230'}$	- 1.4		
		$\frac{3.75}{130'}$	- 0.85		
		$\frac{3.55}{140'}$	$\frac{3.35}{300'}$	$\frac{2.25}{270'}$	- 3.45
		$\frac{3.45}{70'}$		$\frac{3.95}{80'}$	- 1.15
$\frac{2.9}{170'}$	$\frac{2.9}{380'}$	$\frac{2.6}{380'}$		- 1.10	
				+ 0.055	

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MISSISSIPPI RIVER.

L E T T E R

FROM

THE SECRETARY OF WAR,

TRANSMITTING

A communication from the Mississippi River Commission in reference to the works of protection to the banks of that river; also to the failure to make provision for the expenses of the Commission.

JANUARY 7, 1887.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 5, 1887.

The Secretary of War has the honor to transmit to Congress a copy of a communication of November 27, 1886, from the Mississippi River Commission, submitting remarks upon the conditions imposed by the river and harbor act of August 5, 1886, upon works of bank protection on that river, and calling attention to the deterioration of the works constructed at Plum Point and Lake Providence Reaches for want of appropriations, and also to the fact that Congress had failed to make provision for the Commissioners' expenses.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF MISSISSIPPI RIVER COMMISSION,
Saint Louis, Mo., November 27, 1886.

SIR: The river and harbor act of August 5, 1886, imposed on the Mississippi River Commission the condition—

That no works of bank protection or revetment shall be executed in said reaches or elsewhere until after it shall be found that the completion of the permeable contracting works and uniform width of the high-water channel will not secure the desired stability of the river banks.

This limitation is based, it is believed, on the theory that a river, if once regulated, will not scour its natural banks. The Commission is somewhat familiar with the opinions and writings of hydraulic engineers, and, so far as it is advised, this theory is totally unrecognized by

any authoritative writer on hydraulics. It is universally recognized by such writers that in general when a large obstruction is placed on one bank of a river a corresponding wearing away of the opposite bank occurs in consequence.

There is no evidence that a regulated river will not cave its banks, and in most cases it is impossible to build permeable contracting works or secure any narrowing of the channel by them without holding the banks in their immediate neighborhood while the work is going on; the unprotected banks would recede while the contracting works were being built.

These general views are fully confirmed by the experience of the Commission on the Mississippi River.

The contraction works at Gold Dust, Plum Point, Duncansby, and Baleshed have been followed by caving on the opposite bank, whose immediate result is, by again enlarging the cross-section of the river, to destroy any beneficial results the contraction works might otherwise produce.

That such works may secure any valuable permanent contraction, the opposite bank must in general be held by protection works.

In the opinion of the Commission the idea that the Mississippi River can be permanently improved by contraction works alone is purely visionary and theoretical, contradicted by experience and not supported by any good authority. To adopt such a system is, in the opinion of the Commission, to waste public money. Holding these views, the Commission, as engineers, cannot recommend to Congress so futile an undertaking.

In the work which has been done in the Plum Point and Lake Providence Reaches, the plan which has been so frequently and explicitly recommended by the Commission in previous reports, and which embraces the combination of permeable contracting works and bank protection as means of narrowing and deepening the channel, has been applied.

The work has been conducted under difficulties which can justly be called extraordinary. Since its commencement a succession of floods has occurred without precedent, by which the work has been greatly interfered with, and large expense and losses incurred.

On two occasions the annual appropriations have failed entirely, and in no case except one has it reached the amount recommended. During long intervals of time the works have remained in an unfinished condition, exposed to injuries which under favorable conditions might have been prevented.

Nevertheless the deepened channel through the improved portions of these reaches has been maintained continuously. The present season has been one of extraordinary low water—the lowest since 1879. In many parts of the river the depth has fallen to 6 feet and under. But in the improved parts of these reaches there has been at all times a navigable channel of ample depth.

Before these works were begun these reaches were the worst places on the river. It was for that reason that their improvement was undertaken first in order. They are now good.

These successful and gratifying results have been obtained by the combination of permeable contracting works and bank protection, each supplementing and aiding the other, and, in the opinion of the Commission, could not have been obtained by permeable contracting works alone. In the act of August 5, 1886, certain restrictions already referred to, not entirely free from ambiguity, are laid upon the use of bank protection or revetment as means of channel improvement. In the rec-

ommendations made for the expenditure of this appropriation the Commission have regarded these restrictions, and have recommended no work of bank protection or revetment that does not seem to them to be absolutely necessary to save from destruction costly work already done or valuable results already attained, leaving to yourself, at the same time, the final question of the full meaning and intent of the law.

The Commission would call attention to the fact that Congress having failed at its last session to make any provisions for payment of its expenses, and the Attorney-General having decided that such expenses could not be paid from the appropriation, it has been impossible to make such inspections of the work as are much to be desired.

The Commission would also call attention to the fact that the works at Plum Point and Lake Providence have seriously deteriorated during the absence of appropriations for carrying them on, and hence that the appropriations asked for in the annual report should be granted, as the works on these reaches are still incomplete, and funds are not available for their completion.

Q. A. GILLMORE,
Col. Engineers, Bvt. Maj. Gen., U. S. A.,
President Mississippi River Commission.

C. B. COMSTOCK,
Lieut. Col. Engineers and Bvt. Brig. Gen.

CHAS. R. SUTER,
Maj. Engineers, U. S. A.

HENRY MITCHELL,
Coast and Geodetic Survey.

R. M. HARROD.

R. S. TAYLOR.

S. W. FERGUSON.

The SECRETARY OF WAR.

(Through the Chief of Engineers.)

ARMY BUILDING, NEW YORK,
December 22, 1886.

I concur very generally with the views expressed in the foregoing letter, and have accordingly signed it as president of the Commission, with the following reservation on the subject of bank protection: The revetment of a caving bank with mattresses or other similar device is perhaps the quickest way to afford protection, for the reason that it interposes a covering capable of resisting the wearing and undermining action of impinging water. But the most complete and efficacious method requires that the current be turned away from the threatened bank. This can best be done usually by permeable dikes placed above the point in danger and requiring protection, having their lengths severally adjusted to the object in view.

Q. A. GILLMORE,
Bvt. Maj. Gen., President Mississippi River Commission.

BALTIMORE HARBOR.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With inclosures, an estimate from the Chief of Engineers of the cost of widening Baltimore Harbor.

JANUARY 7, 1887.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 5, 1887.

The Secretary of War has the honor to transmit to the House of Representatives, in compliance with the requirements of the river and harbor act of August 5, 1886, a letter of the 27th ultimo, from the Chief of Engineers, together with the accompanying copy of a report from Lieut. Col. William P. Craighill, Corps of Engineers, containing an estimate of the probable cost of widening the channel of Baltimore Harbor to 600 feet.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 27, 1886.

SIR: In compliance with the requirements of the river and harbor act of August 5, 1886, for an examination and survey for widening the channel of Baltimore Harbor to 600 feet, I have the honor to submit the accompanying copy of a report thereon from Lieut. Col. William P. Craighill, Corps of Engineers, in charge of the improvement of that harbor, which contains (no preliminary examination or survey therefor being necessary) an estimate of the probable cost of such an enlargement of the channel, and to suggest that the report be transmitted to the House

of Representatives for the information of the Committee on Rivers and Harbors.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

REPORT, WITH ESTIMATE, RESPECTING THE COST OF WIDENING THE
CHANNEL OF BALTIMORE HARBOR, MARYLAND, TO 600 FEET.

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., December 17, 1886.

GENERAL: I have the honor to submit below an estimate of the cost of widening the channel to the harbor of Baltimore to 600 feet, as required by the act of August 5, 1886. Before giving the figures, an explanatory statement will be made.

This improvement has been a progressive one, the extent being increased from time to time as commerce required.

By nature the channel of approach to Baltimore had in it some places with not more than 16 or 17 feet at mean low water. This depth was increased at high water by 18 inches. The commerce of Baltimore was therefore, of necessity, carried on in vessels of rather small size.

The project of improvement at first adopted and commenced, in October, 1853, had for its object to give a channel 22 feet deep at mean low water, with a width of 150 feet.

Little was done before the late war, but afterwards these dimensions were increased, a depth of 24 feet at mean low water being determined upon, with a width of channel ranging from 250 to 400 feet. This channel was completed in 1874, important changes of position having been given to a portion of it, by which the distance was materially lessened and the expense of maintenance decreased.

The object of this improvement was to permit the approach to Baltimore, at mean low water, of vessels drawing from $22\frac{1}{2}$ to 23 feet, and, at ordinary high water, of vessels drawing 24 or $24\frac{1}{2}$ feet.

To this important work, in its stage of development in 1881, the city of Baltimore and the State of Maryland, chiefly the former, had contributed over \$500,000. The expenditures of the United States were more than twice as much.

In January, 1881, and upon a call of Congress for information, an estimate was submitted of the cost of deepening the channel to 27 feet at mean low water. Congress sanctioned this step forward in the improvement, in express terms, in the river and harbor act of March 3, 1881, and appropriated \$150,000 for commencing it. Other appropriations have since been made, and the channel throughout its whole length has been deepened to 27 feet at mean low water. The width is over 300 feet, and it is expected to increase this width throughout to 400 feet by the end of 1887.

But this width is not enough for the channel of a great port, and it has been constantly reported from this office that the dimensions contemplated in the estimates were kept at the minimum point.

The completion of the channel on that basis being near was doubtless the cause of the introduction into the last river and harbor bill of the direction mentioned in the first paragraph of this communication.

To complete the channel to the width of 400 feet will require a further appropriation of \$80,000, as stated in the annual report for the year ending June 30, 1886.

To make the width 500 feet will cost.....	\$620,000
To make the width 600 feet will cost.....	1,240,000

In this estimate it is proposed to have the whole channel 27 feet deep at mean low water.

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

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The following is a list of the books in the collection of the New York Public Library, which are now in the possession of the Library of the City of New York.

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LEGATION AND CONSULATES IN COREA.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, a letter from the Secretary of State in relation to the establishment of United States legation and consulates in Corea.

JANUARY 7, 1887.—Referred to the Committee on Foreign Affairs and ordered to be printed.

TREASURY DEPARTMENT, *January 6, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a letter from the Secretary of State of the 20th ultimo, and its inclosure, in relation to the proper establishment of the United States legation and consulates in Corea.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, December 20, 1886.

SIR: I have the honor to transmit herewith, that the same may be communicated to the Committees on Foreign Relations and Foreign Affairs of the Senate and House, respectively, a copy of a dispatch from Ensign George C. Foulk, U. S. N., chargé d'affaires *ad interim* of this Government at Seoul, No. 14, of October 28 last, touching the proper establishment of the legation and consulates in Corea.

In this connection Mr. Foulk says that consular offices at Chemulpho and Fusan are urgently needed, as necessary adjuncts to the legation and consulate-general at Seoul, and to the accommodation of our rapidly increasing interests in that quarter, provided we wish to maintain or better our present position in Corea. He asks also that an appropriation for a secretary or clerk to the legation be provided, and that, in addition, allowance be made for janitors, guards, and marshal to the legation and consulate-general.

In the Department's judgment, Mr. Foulk's recommendations are worthy the serious consideration of Congress, and it would be gratifying to the Department to see his wishes complied with.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

Hon. DANIEL MANNING,
Secretary of the Treasury.

No. 14.]

LEGATION OF THE UNITED STATES,
Seoul, Corea, October 28, 1886.

SIR: I would again earnestly ask the Department's attention to the growing urgent need of a consular officer of the United States at Chemulpho. The importance of the port is increasing steadily, and the amount of work demanded in regard to it of this legation has already reached a point beyond the capacity of the legation, and our merchants and future interests generally are seriously obstructed and injured.

The demand for land in the general foreign settlement at Chemulpho is fair; some thirty-five lots have been sold, and business of the several kinds is being conducted as at the ports of China and Japan. I refer here to western foreigners only; the Chinese and Japanese settlements continue to grow rapidly in size and prosperity.

I have been referred to repeatedly by our merchants for consular assistance in conducting their business at Chemulpho and establishing their stores and agencies. To conduct such necessary business they must either travel a distance of 28 miles to the capital, or do it by a wearisome correspondence. The work of this legation pertaining to the American community in Seoul, together with that of a diplomatic character with the Corean Government, is preposterously out of comparison with the capacity of myself—stationed here entirely alone—to perform it. For an interval of nearly two years I have alone here executed more than the work of any other legation in Corea, and at each of these other legations the chief is provided with not less than two assistants of his country, besides a full staff of oriental employés. I have believed that the wish of our Government was that its representative here should do his utmost to effect the most favorable position for our Government and its commercial and other interests in the eye of the Corean officials and people. Such a position has been attained and maintained since I have been in charge here, but only at the expense largely of my personal means and by my denying myself almost every consideration of a purely personal, individual character.

The work of the legation has more than reached the limit of its capacity, and if it is the desire and intention of our Government to maintain or better our position in Corea it is absolutely necessary that it furnish the necessary and qualified officers for the work and equip its offices efficiently. Basing my application on the above considerations, I beg to submit the following expression of the needs of our official establishment in Corea:

1. A consul, vice-consul, or commercial agent to be established at Chemulpho. A similar officer should be appointed for Fusan. With the view of soon establishing a consulate at Chemulpho, such outfit of a consulate as is usually supplied from the Department should be sent to this legation at once.

2. The consulate-general at this legation has not been equipped with the record-books, blank forms, and other paraphernalia necessary to the establishment of a consular office apart from the office of the diplomatic agent. Such an outfit should be supplied at once.

3. This legation should be supplied with a salaried secretary of legation, or at least a clerk adequately paid; fiscal appropriations by the Department for the pay of a janitor, guards, but, above these latter, a marshal.

I firmly believe that this country is worthy fully of the considerations I have asked from time to time of the Department of State. I am well aware that my reports upon Corea present features at variance to newspaper reports, and even to those of other officials; yet if the latter be traced to their sources, I am confident that most of them will be found to be either fabricated to effect some selfish political purpose, or else prepared by some hasty observer, who was not permitted, as is common enough here, to make observations applicable to the country in general.

I am, &c.,

GEORGE C. FOULK,
Ensign, United States Navy, Chargé d'Affaires ad interim.

Hon. T. F. BAYARD,
Secretary of State, Washington, D. C.

SALARIES AND EXPENSES INTERNAL-REVENUE SERVICE.

LETTER

FROM

THE SECRETARY OF THE TREASURY.

TRANSMITTING

A letter from the Commissioner of Internal Revenue, and asking an immediate additional appropriation for "salaries and expenses of collectors of internal revenue," current fiscal year, required to execute provisions of the oleomargarine act and of the act in relation to the inspection of exported tobacco.

JANUARY 7, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 6, 1887.*

SIR: I have the honor to transmit herewith a letter from the Commissioner of Internal Revenue, dated the 5th instant, asking for an immediate additional appropriation of \$50,000 for "salaries and expenses of collectors of internal revenue" for the current fiscal year.

Urgency is demanded to properly execute the so-called oleomargarine act, and also the act of August 4, 1886, devolving upon the Government the expenses of the inspection of tobacco exported, theretofore paid by the exporter.

Referring to the reasons stated by the Commissioner for the necessity for prompt action, I respectfully recommend that the appropriation be made with as little delay as possible.

Respectfully, yours,

D. MANNING,
Secretary.

Hon. JOHN G. CARLISLE,
Speaker of the House of Representatives, Washington, D. C.

TREASURY DEPARTMENT,
OFFICE OF INTERNAL REVENUE,
Washington, January 5, 1887.

SIR: I have the honor to recommend that an additional appropriation of \$50,000 for "salaries and expenses of collectors of internal revenue" for the current fiscal year be requested from Congress at once.

The necessity for this increased appropriation grows out of the additional expenses necessary to carry out the provisions of the act of August 2, 1886, imposing an internal-revenue tax on oleomargarine, and the act of August 4, 1886, devolving upon the Government the expenses of the inspection of tobacco exported, theretofore paid by the exporter.

The appropriation for the present year under this head was \$50,000 less than for the years 1885-'86, and it contained the clause prohibiting the employment of a greater number of deputy collectors and other subordinate officers than were employed during the last fiscal year.

There are applications now on file from collectors from all parts of the country for the appointment of additional deputies and clerks, representing that unless such additional force is provided it will be utterly impracticable to enforce the provisions of the oleomargarine act, and especially as it affects so large a number of persons not heretofore liable to internal-revenue taxes, and who are unfamiliar with the internal-revenue laws.

In order to successfully carry out the provisions of the oleomargarine act with the least inconvenience and delay to the tax-payers, it is desired to appoint in certain districts deputy collectors who are capable of making analysis of samples of goods which the officers may have reason to believe are liable to internal-revenue tax, but which fact can in many cases be ascertained only by chemical analysis of the products exposed for sale.

I would therefore recommend that such legislation as imposes these limitations and restrictions upon the appointment of this class of officers be repealed, or so modified as to make available the additional appropriation herein contemplated.

Respectfully,

JOS. S. MILLER,
Commissioner.

Hon. DANIEL MANNING,
Secretary of the Treasury.

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DAM-SITE, HERR'S ISLAND, ALLEGHENY RIVER.

LETTER

FROM

THE SECRETARY OF WAR,

WITH

*Inclosures recommending legislation authorizing the purchase of land for
a dam-site at Herr's Island, Allegheny River.*

JANUARY 7, 1887.—Referred to the Committee on Rivers and Harbors and ordered
to be printed.

WAR DEPARTMENT,
Washington City, January 5, 1887.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 23d ultimo from the Chief of Engineers, from which it will be seen that the sum of \$37,500 is appropriated by the river and harbor act approved August 5, 1886, for beginning the construction of a dam at Herr's Island, in the Allegheny River, near Pittsburgh, Pennsylvania, but that no provision is made for the purchase of the land necessary for the dam and its appurtenances.

As section 3736 of the Revised Statutes provides that "no land shall be purchased on account of the United States except under a law authorizing such purchase," it is recommended that the requisite legislation for purchasing the land be enacted, in order that the work contemplated may be undertaken.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 23, 1886.

SIR: The river and harbor act approved August 5, 1886, contains the following item:

For beginning the construction of a dam at Herr's Island, in the Allegheny River, near Pittsburgh, Pennsylvania, \$37,500.

No provision is made for the purchase of the land necessary for the dam and its appurtenances, and under the requirements of section 3736 of the Revised Statutes such land cannot be obtained "except under a law authorizing its purchase."

I have the honor, therefore, to recommend that the matter be brought to the attention of the Committee on Rivers and Harbors of the House of Representatives, with the view to obtaining the requisite legislation for purchasing the land, in order that the work contemplated may be undertaken.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

○

PATRICK CORR.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With inclosures, a letter from the Adjutant-General, recommending that the salary of Patrick Corr, general-service clerk, be increased to \$1,200 per annum.

JANUARY 7, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 5, 1887.

The Secretary of War has the honor to transmit to the House of Representatives a communication from Patrick Corr, general-service clerk, United States Army (of \$1,100 grade), and chief clerk at headquarters recruiting service, New York City, who requests to be placed on the same footing with regard to pay as chief clerks at headquarters of military divisions and departments, who receive \$1,200 per annum. The application is recommended by the superintendent of the recruiting service, who states that the services performed by the applicant justify him in making the request.

The Adjutant-General of the Army, in submitting the accompanying papers, recommends additional legislation, to take effect in the appropriations for the fiscal year ending June 30, 1888, providing for the increase of the number of clerks of the \$1,200 grade from ten to eleven, and for the corresponding reduction of the number of clerks of the \$1,100 grade from twenty-five to twenty-four.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
ADJUTANT-GENERAL'S OFFICE,
Washington, December 18, 1886.

SIR: I have the honor to transmit herewith a communication from Patrick Corr, general-service clerk, United States Army (\$1,100 grade),

and chief clerk at headquarters recruiting service, New York City, who requests to be placed on the same footing with regard to pay as chief clerks at headquarters of military divisions and departments, who receive \$1,200 per annum.

The applicant states that, in addition to his regular duties as chief clerk, he performs the duties of clerk to the disbursing officer of the recruiting service; that all his duties have become much heavier and more responsible since the recent consolidation of the cavalry and infantry recruiting service; and he also points out that before the establishment of the present class of general-service clerks the chief clerk of the general recruiting service received the same rate of pay as that allowed to chief clerks at division headquarters, which was then more than that allowed to chief clerks at department headquarters.

The application is recommended by the superintendent of the recruiting service, who states that Clerk Corr actually performs the services as stated by him, and that such services fully justify him in making this request.

The act of Congress approved June 30, 1886 (copy herewith), for the support of the Army for the current fiscal year, established the following rates of pay for the one hundred and twenty-five general-service clerks provided for by that act: Ten clerks at \$1,200, twenty-five at \$1,100, and ninety at \$1,000 each.

The status of these clerks and their classification were further embodied in "An act for the enlistment and pay, and to define the duties and liabilities, of general-service clerks and messengers in the Army" (copy herewith).

Attention is respectfully invited to the inclosed copy of General Orders No. 43, current series, from this office, announcing the distribution of this force of general-service clerks, from which it will be seen that of the clerks of the grade of \$1,200, one is allowed to Army Headquarters, and one to each division and department headquarters; the clerks who receive this rate of pay being the chief clerks at the respective headquarters, of which there are ten.

From an intimate knowledge of the affairs of the recruiting service, I am convinced that the duties of the chief clerk, especially since the consolidation of the cavalry and infantry recruiting service, are much more arduous than those of the chief clerk at any other headquarters. In addition to this, the request of Clerk Corr is worthy of special consideration on account of the additional duties performed by him as clerk to the disbursing officer of the recruiting service. I therefore respectfully recommend that additional legislation be obtained providing for the increase of the number of clerks of the \$1,200 grade from ten to eleven, and for a corresponding reduction of the number of clerks of the \$1,100 grade from twenty-five to twenty-four, and that the necessary steps be taken to carry such legislation into effect in the appropriation for the fiscal year 1887-'88. The total amount of the increased expenditure herein recommended is \$100.

I have the honor to be, sir, very respectfully, your obedient servant,
R. C. DRUM,
Adjutant-General.

The SECRETARY OF WAR.

HEADQUARTERS OF THE RECRUITING SERVICE,
ARMY BUILDING,
New York City, December 3, 1886.

GENERAL: Under the allotment made in paragraph 3, General Orders No. 43, Headquarters of the Army, Adjutant-General's Office, June 30, 1886, two general service-clerks were allowed at these headquarters, at a compensation of \$1,100 per annum, while at the several division and department headquarters one clerk is allowed at \$1,200 per annum.

Prior to the issue of the above order I received the same pay as the chief clerks of division headquarters, and more than the chief clerks of department headquarters, owing to the fact, I presume, that the Adjutant-General considered my duties more responsible than those of the chief clerks at department headquarters, having, in addition to my duties as chief clerk, to perform those of clerk to the disbursing officer of the recruiting service, which, I most respectfully submit, devolves labors and responsibilities equal at least to those of citizen clerks to disbursing officers of the Quartermaster's Department, and more than the chief clerks of division and department headquarters.

In this connection I would respectfully call attention to the fact that I have been performing the extra duty as disbursing officer's clerk—a duty not performed by any clerk at division or department headquarters—for a period of seventeen years, during which time I have not received any extra compensation.

In view of these facts, I most respectfully request that the necessary action be taken to secure to me at least the pay that is allowed to chief clerks at division and department headquarters.

I am, general, very respectfully, your obedient servant,

PATRICK CORR,
General-Service Clerk,
Chief Clerk.

The ADJUTANT-GENERAL,
U. S. A., Washington, D. C.
(Through Superintendent Recruiting Service.)

[First indorsement.]

HEADQUARTERS OF THE RECRUITING SERVICE,
New York City, December 3, 1886.

Respectfully forwarded to the Adjutant-General of the Army.

The services performed by the applicant fully justify him, in my opinion, making this request.

Clerk Corr's services are arduous and important. So much of them as pertain to disbursements are most valuable, and are now much greater than before the consolidation of the recruiting service.

I respectfully recommend that he be rated as a \$1,200 clerk, and if this cannot be done now, that measures be taken to have it provided for in the next appropriation bill.

A. L. HOUGH,
Lieutenant-Colonel Sixteenth Infantry,
Superintendent Recruiting Service.

[Indorsement.]

ADJUTANT-GENERAL'S OFFICE,
December 9, 1886.

Under the allotment made by General Orders No. 43, current series, from this office, six general-service clerks are allowed at headquarters of the recruiting service—two at \$1,100 and four at \$1,000 each.

Prior to the issue of that order the chief clerk at those headquarters was allowed the same compensation as the chief clerk at division headquarters.

Patrick Corr, chief clerk at headquarters recruiting service, requests that he be allowed at least the same pay as chief clerks at division and department headquarters (\$1,200); says that in addition to his duties as chief clerk he performs those of clerk to the disbursing officer of the recruiting service, which devolves labors and responsibilities equal at least to those of citizen clerks to disbursing officers of the Quartermaster's Department, and more than equal to those of the chief clerks at division and department headquarters. These additional duties he has performed for the last 17 years without extra pay.

The superintendent of the recruiting service states that Clerk Corr's services are arduous and important; so much of them as pertain to disbursements being most valuable, and much greater now than before the consolidation of the recruiting service,

and recommends that he be rated as a \$1,200 clerk; or, if this cannot be done now, that measures be taken to have it provided for in the next appropriation bill.

The Adjutant-General directs that a letter be written to the Secretary of War recommending legislation in the case.

WOOD,
Acting Adjutant-General.

[General Orders No. 54.]

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, August 6, 1886.

The following act of Congress is published for the information and government of all concerned:

AN ACT for the enlistment and pay and to define the duties and liabilities of "general-service clerks" and "general-service messengers" in the Army.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of War be, and he is hereby, authorized and directed to cause to be enlisted and mustered into the service of the United States, for clerical service and messenger duty at the Headquarters of the Army and at the several division, department, and district headquarters, at headquarters general service, at recruiting depots, and at West Point, New York, in the Army, a corps of men not to exceed one hundred and seventy, who shall be subject to the Articles of War and Army Regulations the same as enlisted men on duty in the line, but shall not be subject to be assigned to any other than clerical and messenger duty, as hereinbefore specified; nor shall this number be computed as a part of the number at which the Army is now limited by law.

SEC. 2. That of the men so enlisted one hundred and twenty-five shall be "general-service clerks," who shall be classified and paid as follows: Class one shall consist of ninety clerks, at one thousand dollars per annum; class two shall consist of twenty-five clerks, at one thousand one hundred dollars per annum; class three shall consist of ten clerks, at one thousand two hundred dollars per annum; and the remaining forty-five of such men shall be "general-service messengers," who shall be paid at the rate of sixty dollars per month; and all of such men shall be mustered for pay monthly the same as enlisted men, and shall receive no other compensation, pay, or allowance, except when on duty, when necessity requires, they shall each be allowed for subsistence one ration in kind, to be issued by the Commissary Department.

SEC. 3. That the provisions of law relating to the retirement of enlisted men shall be construed to include "general-service clerks" and "general-service messengers," and, for the purpose of retirement, they will rank as follows: General-service clerks of class three, with first sergeants of the line; general-service clerks of class two, with sergeants of the line; general-service clerks of class one, with corporals of the line; general-service messengers, with privates of the line.

Approved July 29, 1886.

By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

[General Orders No. 43.]

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, June 30, 1886.

I. By direction of the Secretary of War all general-service clerks and messengers now in service will be discharged to date June 30, 1886. Those selected to be retained under the allotment made in paragraph III of this order will be enlisted to date July 1, 1886, for five years. In selecting clerks and messengers to be retained under this order, preference will be given to men of the present general-service detachments.

II. Such of the detailed messengers at the several headquarters as are not selected for enlistment under the act of Congress approved June 30, 1886, will be returned to their respective commands.

III. Under this order the following distribution of general-service clerks and messengers is announced, viz:

Headquarters.	Clerks.				Messengers.
	\$1,200.	\$1,100.	\$1,000.	Total.	
Headquarters of the Army.....	1	2	4	7	4
Headquarters general recruiting service		2	4	6	2
U. S. Military Academy		2	2	4	1
Division of the Atlantic	1	2	9	12	4
Division of the Missouri	1	3	8	12	4
Division of the Pacific	1	2	9	12	4
Department of Arizona	1	2	11	14	4
Department of the Columbia.....	1	2	7	10	4
Department of Dakota.....	1	2	10	13	4
Department of the Missouri	1	2	9	12	4
Department of the Platte	1	2	9	12	4
Department of Texas	1	2	8	11	4
Washington Army Dispensary.....					2
Total.....	10	25	90	125	45

IV. The number of general-service clerks and messengers assigned under this order must include all those on duty in the Adjutant-General's, Inspector-General's, Judge-Advocate-General's, Medical, and Engineer Departments at division and department headquarters. The Lieutenant-General of the Army will determine from time to time the distribution that should be made of the general-service men among the several commands, according to the exigencies of the service.

V. Hospital stewards, being enlisted for special duties, are not eligible for detail as clerks; any clerical work they may perform is only incidental to their other duties. One hospital steward only is allowed at the headquarters of a division or department.

VI. The several commanders are authorized, at their discretion, to discharge, disrate, and promote their general-service clerks and messengers and to fill vacancies by enlistments. In case it is desired to enlist as general-service clerk or messenger a soldier belonging to any organization in the Army, application will be made to the Adjutant-General of the Army for his discharge from his command with a view to such enlistment in the general service.

VII. All enlisted men, including messengers, at every headquarters will be mustered monthly on one roll.

By command of Lieutenant-General Sheridan.

J. C. KELTON,
Acting Adjutant-General.

[General Orders No. 47.]

HEADQUARTERS OF THE ARMY,
ADJUTANT-GENERAL'S OFFICE,
Washington, July 8, 1886.

* * * * *

ENLISTED MEN.

For pay proper of the enlisted men of all grades, \$4,276,588.

For pay of one hundred and twenty-five men enlisted as general-service clerks at Army, division, department, and district headquarters, at the headquarters of the general recruiting service, at recruiting depots, and at West Point, New York, as follows: Ten clerks, at \$1,200 each; twenty-five clerks, at \$1,100 each; and ninety clerks, at \$1,000 each; said sums to be in full for all pay, commutations, and allowances; in all, \$129,500.

For pay of forty-five men enlisted as general-service messengers, at the rate of \$60 per month each, in full for all pay, commutations, and allowances, \$32,400.

Service pay to enlisted men: For pay to enlisted men by reason of length of service, in addition to their monthl pay and payable therewith, \$368,784.

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SAINT MARY'S RIVER, MICHIGAN.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With inclosures, an estimate from the Chief of Engineers of cost of improving Saint Mary's River, Michigan, and of continuing work on new lock.

JANUARY 7, 1887.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 5, 1887.

The Secretary of War has the honor to transmit to the House of Representatives, for the information of the Committee on Rivers and Harbors, a letter of the 31st ultimo from the Chief of Engineers, together with a copy of one from Lieut. Col. O. M. Poe, Corps of Engineers, submitting a revised estimate of the probable cost of improving Saint Mary's River, Michigan, and continuing the improvement by means of a new lock and approaches.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 31, 1886.

SIR: I have the honor to transmit the inclosed copy of a communication to this office, dated December 22, 1886, from Lieut. Col. O. M. Poe, Corps of Engineers, submitting revised estimate of the probable cost of improving Saint Mary's River, Michigan, and continuing the improvement by means of a new lock and approaches, and to recommend that it be sent to the Speaker of the House of Representatives for the information of the Committee on Rivers and Harbors.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

The SECRETARY OF WAR.

REPORT OF LIEUTENANT-COLONEL O. M. POE, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
34 CONGRESS STREET WEST,
Detroit, Mich., December 22, 1886.

SIR: The problem of "improving Saint Mary's River, Michigan, continuing improvement by a new lock and approaches," has reached that stage when it is practicable to submit a better estimate of the probable cost than it has been possible to make prior to this time.

Certain general features of the project submitted for consideration with my letter of August 25, 1886, have already received the approval of the Chief of Engineers and the War Department, viz, the general dimensions of the proposed lock (800 feet between hollow quoins, 100 feet wide throughout, 21 feet of water on the miter-sills, and a single lift of 18 feet); the navigable depth of the canal prism (20 feet); the omission of middle gates, the number of filling culverts to be not less than four nor more than six.

Since submitting the project referred to, an accident of a character not anticipated has occurred to the lower gates of the lock of 1881 (see my letter of December 21, 1886), indicating the probability that it would be wise to reconsider the action adverse to the construction of a set of intermediate gates, with a view to reducing to a minimum the length of time that navigation would be interrupted in case of such injury to the lower gates as to require them to be rebuilt). If such an accident were to happen a set of intermediate gates, just above the lower gates, would serve a valuable purpose not heretofore considered, namely, to permit the use of the lock, somewhat shortened in the chamber, whilst the new gates were under construction. This matter is so important that I feel compelled to reconsider my former proposition, and to now recommend that a set of intermediate gates be provided for to be placed as near the lower gates as circumstances will permit, but not above the middle of the lock-chamber.

In making up the estimates I have avoided going into detail as regards dimensions and modes of construction, preferring to leave all questions relating to these matters in such form as to admit of complete flexibility.

For convenience in estimating the work has been divided into 13 parts, as follows:

- (1) Building coffer-dam.
- (2) Excavating lock-pit.
- (3) Building culverts and lock-floor.
- (4) Building lock-walls.
- (5) Constructing gates.
- (6) Lock machinery and machine-house.
- (7) Deepening canal to 21 feet.
- (8) Remodeling movable dam.
- (9) Building pier in front of Fort Brady Reservation, and extension of the north-east pier. (These form part of the approaches to the lock.)
- (10) Earth filling.
- (11) Building office and warehouse.
- (12) Engineering and office expenses.
- (13) Pumping lock-pit during construction.

(1) *For building the coffer-dam*, plans, estimates, and specifications were submitted by me, under date of October 18, 1886, and duly approved, the estimated cost being \$195,392.88, the materials to be furnished by contract and the work done by the same mode.

(2) *Excavating the lock-pit*.—The estimate is made as follows: The amount to be excavated is very nearly twice as great as was required for the lock of 1881, the cost of which was \$176,850. Since the

character of material, cost of labor, facilities for dumping, &c., are practically the same in both cases, the total cost will be proportional to the amount. Therefore the estimated cost of excavating the lock-pit for the proposed lock is \$353,700, or about \$1.25 per cubic yard. This part of the work should be done by contract.

(3) *Building culverts and lock-floor.*—Since there are to be nearly five times as many linear feet of culverts in the proposed lock as in that of 1881, the cost is estimated at five times the cost of the present culverts, or \$285,000, and since the floor and foundations in the proposed lock are twice as large as in that of 1881, the cost is estimated at twice that of the present floor and foundations, or \$170,000, making together the sum of \$455,000. This part of the work should be done by contract.

(4) *Masonry of the lock-walls.*—It is estimated that there will be 70,000 cubic yards of stone-work. The cost per yard in the lock of 1881 was about \$14 per cubic yard. The estimated cost of masonry in the proposed lock is therefore \$980,000. The manner of doing this is left in abeyance.

(5) *The gates.*—The material of which the gates should be built has not yet been determined. If it should be decided to build them of iron there is nothing with which to compare them, and estimates can only be made after the material and plans have been settled upon. As an approximate estimate, however, sufficient probably to cover the cost whatever material be used, the sum of \$250,000 may be named, and it is probable that the work should be done by contract, certainly in that manner in case iron be selected as the material.

(6) *Lock machinery, machine-house, &c.*—The cost of these need not materially exceed that of the lock of 1881, which was about \$80,500, or, say, for the new lock, \$100,000.

(7) *Deepening the canal.*—The approved project contemplates a 20-foot navigation. At present vessels pass drawing 15 feet of water. When the lock is being filled the lowering of the water in the canal occasionally causes them to touch bottom. This will be much more liable to occur when there are several more culverts in operation. There should then be at least one foot of water under the keel of a vessel drawing 20 feet. The extent of the deepening required is therefore 6 feet. The amount to be excavated for this depth between the upper end of the locks and the old coffer-dam is 150,000 cubic yards, and is all sandstone bed-rock, and the cost of excavation of this portion is estimated at \$3 per cubic yard, or a total of \$450,000.

The amount to be excavated above the old coffer-dam is estimated at 225,000 cubic yards. This portion is softer material, and the cost of its removal is estimated at 40 cents per cubic yard, or a total of \$90,000.

The amount to be removed from below the locks is estimated at 64,000 cubic yards of bed-rock and boulders, all of which must be excavated under water. The cost is estimated at \$3 per cubic yard, or a total of \$192,000.

The aggregate cost of excavation is consequently estimated at \$450,000 + \$90,000 + \$192,000 = \$732,000 and the whole of it should be done by contract.

(8) *New movable dam.*—Since the length of the wickets will be 6 feet greater, the new dam should be about twice as strong as the present one, the cost of which was \$95,500. The estimated cost of the new one is therefore \$191,000.

(9) *Building pier in front of Fort Brady Reservation, and extension of the northeast pier.*—These constitute a part of the approaches to the locks. The former was contemplated when the water-front of the mili-

tary reservation was set apart for canal purposes, and has been many times referred to within the last three years. It should be one of the earliest works undertaken. Its length will be about 1,200 feet, and its cost is estimated at \$40,000. The northeast pier need not be built until some time has elapsed. Its length will be about 1,200 feet, and its cost is estimated at \$50,000, or an aggregate of \$90,000 for the two.

(10) *Earth filling*.—The amount of this that will be required is estimated at twice the quantity required for the lock of 1881, and its total cost at twice that in the latter case, or \$44,000.

(11) *Building canal office and warehouse*.—These should be substantial, and include a fire-proof vault for the storage of the drawings, note-books, canal-books, and other valuable records, both during the progress of the work and after its completion. This vault should be built in the earlier stages of the work. The cost of the buildings is estimated at \$75,000.

(12) *Engineering and office expenses*.—These are estimated at \$300,000, upon the supposition that the work will be in progress for ten years.

(13) *Pumping lock-pit*.—The cost of this is estimated at \$25,000, but it should be understood that this is the merest guesswork, as it is utterly impossible to predict what will be required and definitely estimate its cost.

Contingencies.—The contingencies in a work of the character of this one are so numerous and so uncertain that the ordinary estimate of 10 per cent. is not deemed sufficient, and in my opinion it is not safe to estimate them at less than 25 per cent., especially in view of the fact that the comparisons with former work depend upon the prices of material and labor at that time, and they may prove to be considerably greater in the new work.

The estimate of the cost of this work, the largest of its kind in the world, may then be summarized as follows:

For coffer-dam	\$195,392
For excavating lock-pit	353,700
For culverts and lock-floor	455,000
For masonry of lock-walls	980,000
For lock-gates	250,000
For lock machinery	100,000
For deepening the canal	732,000
For new movable dam	191,000
For building pier in front of Fort Brady Reservation and extending north-east pier	90,000
For earth filling	44,000
For building canal office, warehouse, fire-proof vault, &c	75,000
For engineering and office expenses	300,000
For pumping lock-pit	25,000
For contingencies, 25 per cent	947,773
Total	4,738,865

There are still two items not estimated for in the foregoing, which are in the nature of contingencies. The first is referred to in my general project (see pages 16, 17, 18, and 19, of my letter of August 25, 1886), and relates to the possibility of a necessity for increasing the cross-section of the prism in order to furnish a sufficient water supply to the culverts, without causing dangerous currents in the canal. The probability is that the railroad draw-bridge over the canal, authorized by the act of Congress approved July 8, 1882, will be built during next summer. Afterwards the increased water-way could only be obtained by excavating a channel under the land span of the draw-bridge.

The second would arise from the necessity for building a movable dam over this new channel.

The aggregate cost of these two items would be large, but, for the reason that the necessity for them has not been demonstrated, no attempt is made to estimate for them.

I am, sir, very respectfully, your obedient servant,

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

H. Ex. 72—2

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EMPLOYÉS, STATE DEPARTMENT.

LETTER

FROM

THE SECRETARY OF STATE,

TRANSMITTING

A list of the employés in that Department, stating the time actually employed, and that they are usefully employed, and that their services cannot be dispensed with.

JANUARY 8, 1887.—Referred to the Committee on Expenditures in the State Department and ordered to be printed.

DEPARTMENT OF STATE,
Washington, January 6, 1887.

SIR: In compliance with the requirements of section 194 of the Revised Statutes of the United States, I have the honor to report herewith the names of the clerks and all other persons employed in the Department of State, or in any of its offices during the year 1886, with the time each was actually employed and the sum paid to each; and to state that they have been usefully employed, and that the services of none of them can be dispensed with without detriment to the public service.

In answer to the further inquiry of the statute, viz, "Whether the removal of any individuals and the appointment of others in their stead, is required for the better dispatch of business," I may say that, as the clerks of this Department have become trained to a degree of usefulness beyond that which could reasonably be expected from new appointees, I am not at present prepared to recommend any change.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

Hon. JOHN G. CARLISLE,
Speaker of the House of Representatives.

List of officers, clerks, and other employés in the Department of State, present grade of office, and amounts paid them during the year 1886.

Names.	Grade of office.	Time employed.	Amount paid.
Thomas F. Bayard	Secretary	12 months	\$8,000 00
James D. Porter	Assistant Secretary	12 months	4,500 00
William Hunter	Second Assistant Secretary	6 months 22 days	1,959 24
Alvey A. Adeo	Third Assistant Secretary	7 months 5 days	2,092 35
Alvey A. Adeo	Second Assistant Secretary	4 months 26 days	1,407 68
John B. Moore	Third Assistant Secretary	4 months 26 days	1,407 68
Sevelon A. Brown	Chief clerk	12 months	2,750 00
H. Sidney Everett	Chief Diplomatic Bureau	12 months	2,100 00
F. O. St. Clair	Chief Consular Bureau	12 months	2,100 00
John H. Haswell	Chief Index Bureau	12 months	2,100 00
F. J. Kieckhoefer	Chief Bureau Accounts	12 months	2,100 00
Worthington C. Ford	Chief Bureau Statistics	12 months	2,100 00
Theodore F. Dwight	Chief Bureau Rolls and Library.	12 months	2,100 00
Henry L. Thomas	Translator	12 months	2,100 00
Henry L. Bryan	Stenographer	7 months 4 days	1,071 17
Ellis Mills	do	4 months 27 days	728 87
Edward Haywood	Clerk class 4	12 months	1,800 00
George Bartle	do	12 months	1,800 00
Alexander H. Clements	do	12 months	1,800 00
Newton Benedict	do	12 months	1,800 00
John J. Chew	do	12 months	1,800 00
Henry A. Blood	do	12 months	1,800 00
Michael Scanlan	do	12 months	1,800 00
Thomas Morrison	do	12 months	1,800 00
Thomas H. Sherman	do	12 months	1,800 00
Alfred Williams	do	12 months	1,800 00
Thomas W. Cridler	do	12 months	1,800 00
Robert S. Chilton, jr.	Clerk class 3	11 months, 16 days	1,534 77
Prosper L. Schücking	do	12 months	1,600 00
Henry P. Randolph	do	12 months	1,600 00
George L. Scarborough	do	12 months	1,600 00
James R. O'Bryon	Clerk class 2	12 months	1,400 00
James Taggart	do	12 months	1,400 00
T. John Newton	do	12 months	1,400 00
John B. Hawes	do	7 months, 15 days	874 97
Sydney Y. Smith	do	4 months, 16 days	525 07
S. M. Hamilton	do	12 months	1,400 00
James B. Philp	do	12 months	1,400 00
Walter Manton	do	12 months	1,400 00
Sydney Y. Smith	Clerk class 1	7 months, 15 days	750 01
William P. Faherty	do	6 months, 6 days	619 57
Mary G. Markoe	do	12 months	1,200 00
Walter R. Mockridge	do	12 months	1,200 00
Charles McCarthy	do	12 months	1,200 00
Thomas Griffin	do	12 months	1,200 00
Joseph H. Adams	do	12 months	1,200 00
Frederick B. Young	do	12 months	1,200 00
Hugh S. Legaré	do	12 months	1,200 00
Charles H. Campbell	do	12 months	1,200 00
Charles E. Kearney	do	5 months, 11 days	537 36
J. Wilson Bayard	do	12 months	1,200 00
John B. Moore	do	7 months, 5 days	717 40
Julian Taylor	do	12 months	1,200 00
John T. Coughlin	do	6 months, 19 days	662 64
Walter E. Faison	do	5 months, 25 days	580 42
Charles W. Seawell	do	4 months	397 80
George A. Crutchfield	do	48 days	156 52
Edward C. Stewart	Telegraph operator	5 months	498 90
Miles M. Shand	Clerk at \$1,000	12 months	1,000 00
Walter Scott	do	12 months	1,000 00
John T. Coughlin	do	5 months, 11 days	447 82
Frank N. Moore	do	12 months	1,000 00
William McNeir	do	5 months	415 80
Edward C. Stewart	do	1 month	84 20
Louisa A. Pratt	Clerk at \$900	12 months	900 00
Stella A. Yale	do	12 months	900 00
Sophie D. Markoe	do	12 months	900 00
Ella T. Canfield	do	12 months	900 00
Emma M. Sheridan	do	12 months	900 00
Sarah A. Lockwood	do	12 months	900 00
Margaret M. Whitwell	do	12 months	900 00
Juliana W. Gales	do	12 months	900 00
Edward C. Stewart	do	6 months	450 00
William Russell	do	12 months	903 00
William McNeir	Packer	7 months	420 60
Thomas T. Keller	do	5 months	299 40
William Gwin	Messenger	12 months	840 00
Henry W. Freeman	Assistant messenger	12 months	720 00

List of officers, clerks, and other employés in the Department of State, &c.—Cont'd.

Names.	Grade of office.	Time employed.	Amount paid.
Edward A. Savoy	Assistant messenger.....	12 months	\$720 00
Henry Jarvis.....	Laborer	12 months	660 00
John Thomas Johnson	do	12 months	660 00
John Barry	do	12 months	660 00
Richard Gillem	do	12 months	660 00
Russell N. Boyd	do	12 months	660 00
James Quin	do	12 months	660 00
Richard H. Hawkins.....	do	12 months	660 00
J. D. Townley.....	do	12 months	660 00
G. F. Randolph	do	12 months	660 00
John W. Gibson	do	3 months, 4 days.....	172 26
William Freer.....	do	8 months, 26 days.....	487 74
Total.....	.....	.....	112,670 24

Table with 4 columns: Item, Quantity, Price, Total. The table contains multiple rows of data, likely representing a list of stationery items and their costs.

FRENCH SPOLIATION CLAIMS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Attorney-General of an additional appropriation for continuing the investigation of French spoliation claims.

JANUARY 8, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 7, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a letter from the Secretary of State of the 6th instant, inclosing copy of letter from the Attorney-General of the 3d instant, regarding the necessity of continuing the investigations relating to evidence in the matter of the French spoliation claims, and requesting an additional appropriation of \$10,000 for the purpose.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, January 6, 1887.

SIR: I have the honor to inclose herewith a copy of a letter from the Attorney-General of the United States regarding the necessity of continuing the investigation of the records of the prize courts and other depositories of archives in France or elsewhere for documents relating to the claims now pending against the United States in the Court of Claims. The aggregate amount of the claims now filed is estimated to be \$18,000,000, and the number thereof more than 3,000, as to which the United States has no other defense than that afforded by the documentary evidence which has been and is now being procured by the special agent of this Department, Mr. Somerville P. Tuck, mentioned in the letter of the Attorney-General.

I, therefore, have the honor to request that you make application to Congress for the inclusion of such an appropriation in the general deficiency bill as will enable me to continue this important and necessary

work, and I would suggest that the language of the provision be as follows, viz :

To enable the Secretary of State to complete the search now being made in France for records and other documents affecting the rights or claims of American citizens under the act of Congress approved January 20, 1885, entitled "An act to provide for the ascertainment of claims of American citizens for spoliations committed by the French prior to July 31, 1801," and to make a similar search in Spain or elsewhere, and to procure such records and documents as already have been found and that may hereafter be found, or certified copies or abstracts thereof, to be used by the Attorney-General in defense of the United States before the Court of Claims, the sum of \$10,000, or so much thereof as may be necessary, is hereby appropriated, to be expended under the direction of the Secretary of State, and to be immediately available.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

Hon. DANIEL MANNING,
Secretary of the Treasury.

DEPARTMENT OF JUSTICE,
Washington, January 3, 1887.

SIR: Referring to your communication of recent date, inclosing one from Mr. Somerville P. Tuck, dated November 19, 1886, wherein he says that his employment was to cease on the 19th of December following, and that a large field of investigation would be left unexplored, permit me to say that the Court of Claims has now determined, so far as its jurisdiction extends, that this Government rendered itself liable to those having valid claims against France for captures, seizures, and condemnations of an illegal character, and that there were such captures, &c. The defense of the cases now resolves itself into a contention against the validity of each claim upon its own facts and against the illegality of each capture and condemnation. It is chiefly for such a purpose that the documentary evidence which Mr. Tuck has been furnishing is useful. If a given vessel was *legally* captured, in view of her conduct or papers, or a given decree of condemnation was *legal* and right, considering all the facts, then it becomes all-important to be able to demonstrate, by such evidence as Mr. Tuck can procure, that such capture or condemnation was legal and regular. So, also, if fraudulent claims have been filed where, upon appeal, vessels have been released, Mr. Tuck can assist us in showing that such is the case. It must be remembered that the evidence in these cases has never been sifted, and that the lapse of a century leaves the door wide open to imposters. Besides this, a mass of ex parte evidence has been carefully preserved in this country by individuals and in public files, and no evidence has been collected on behalf of the Government. Were Mr. Tuck's efforts less valuable than they are, therefore, it is apparent that no practicable plan of procuring evidence on the defendant's side of the cases can well be dispensed with. He is, indeed, almost our only resource.

It may be proper to add that the defeat of one or two claimants will save more money to the Treasury than has been appropriated for the defense of all the cases.

I have the honor to be, sir, your obedient servant,

A. H. GARLAND,
Attorney-General.

Hon. T. F. BAYARD,
Secretary of State.

FINAL REPORT UNITED STATES GEOLOGICAL SURVEY.

L E T T E R

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, estimates from the Secretary of the Interior, of appropriations for the publication of volume 3, book 2, of the final report of the United States Geological Survey of the Territories.

JANUARY 8, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January 7, 1887.*

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of letter of the Secretary of the Interior of the 5th instant, and inclosures, submitting estimates of appropriations in the sums of \$3,800, for the preparation, from material on hand, of volume 3, book 2, of final report of the United States Geological Survey of the Territories, and \$27,000 for printing and binding volume, for engravings, and for printing engravings for the same.

Respectfully, yours,

D. MANNING,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, January 5, 1887.

SIR: I have the honor to transmit herewith copy of a communication from Prof. E. S. Cope, of the National Museum, dated November 30, 1886, together with copies of letters of Albert Gaudry and Spencer F. Baird, dated July 22 and November 19, 1886, respectively, asking for appropriations of \$3,800 for preparation, from material on hand, of vol. 3, book 2, of final report of United States Geological Survey of the Territories, and \$27,000 for printing and binding volume, and engravings and printing engravings for same, with the request that the same be forwarded to Congress for appropriate action.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

WASHINGTON, D. C., November 30, 1886.

SIR: During the session of Congress of 1877-'78, on motion of Hon. Mr. Patterson of Colorado, a resolution was introduced into the House of Representatives ordering the publication "by the Government Printer, with the necessary illustrations," of volume 3 (among others) of the final report of the United States Geological Survey of the Territories. The motion was concurred in by the Senate.

During the session of 1879-'80, Hon. Mr. Whyte, of Maryland, introduced into the Senate a resolution ordering the publication "by the Government Printer, with the necessary illustrations," of volume 4 (among others) of the final report of the United States Geological Survey of the Territories. This resolution, introduced into the House by Hon. Mr. Wilson, was concurred in by that body.

These volumes have not been published, but much work and money have been expended in their preparation. Among the items of this expense is about \$10,000 by the Government Printer for engravings.

The undersigned has been for some time endeavoring to complete the publication of the two volumes in question, and to that end has spent considerable sums of money in their preparation. In order that the publication be made, and he relieved of the constant expense incurred, an item appropriating \$10,000 was inserted in the sundry civil bill last winter (1885-'86) by the Senate Appropriation Committee. This item was thrown out on the point of order that it had not passed through the Interior and Treasury Departments, in accordance with the rules. The desirability of making the appropriation is supported by the scientific men of America and Europe, so far as heard from, and a few letters are appended in evidence of this fact.

The undersigned desires to have an item similar to that inserted in the Senate bill of last winter inserted in the sundry civil bill of the House which is now in session. He presents the following form, and begs your favorable consideration of the same:

"In the preparation from material on hand of volume 3, book second, of the final report of the United States Geological Survey of the Territories, the publication of the same having been ordered by Congress, \$3,800, to be expended in preparing, drawing, and writing the same, said work to be done by Prof. E. D. Cope, under the direction of the Secretary of the Interior, and the printing and illustrations to be made by the Public Printer.

The items included in the above amount are as follows:

For services of a skilled workman in preparing material.....	\$720 00
For services of an artist for preparing the same for an engraver.....	1,000 00
For services of E. D. Cope, for expert determinations, writing report, &c..	2,080 00
Total.....	3,800 00

The undersigned also asks your approval of the following estimate for expense of printing, engraving, and binding, which has been made by Dr. J. W. Powell, Director of the United States Geological Survey.

For printing and binding volume.....	\$15,000 00
For engraving for same.....	10,000 00
For printing engravings.....	2,000 00
Total.....	27,000 00

(Edition ordered, 4,500 copies.)

The undersigned refers to Dr. J. W. Powell, Chief of the United States Geological Survey, and to Prof. S. F. Baird, Secretary of the Smithsonian Institution, who are familiar with the facts.

With much respect,

EDW'D D. COPE,

Member United States National Academy of Science.

Address, Smithsonian Institution, Washington, D. C.

Hon. L. Q. C. LAMAR,

Secretary of the Interior.

[From Prof. Albert Gaudry, Director of the Paleontological Museum of Paris, Jardin des Plantes.—
Translation.]

You inform me that the United States Congress are about considering the proposition of publishing the second part of the work of Professor Cope upon the Tertiary Vertebrates. I trust that there will be no hesitation in regard to the continuation of this great work. I am sure that all our paleontologists share my desire to see the completion of a work of such importance. The sympathy which we have in France

for the American people causes us to follow with interest their progress as rapid in science as in the other branches. Besides this, the discoveries accomplished during the few years past in North America have such a bearing upon paleontology in general that the savants of all countries cannot fail to devote attention to them.

[Smithsonian Institution, Spencer F. Baird, Secretary.]

WASHINGTON, D. C., July 22.

DEAR PROFESSOR COPE: Your letter of the 17th, by some unknown cause, has only reached me to-day, and I hasten now to reply.

I answered your telegram as I understood it, and was not aware that you wanted it in any different form.

In reference to writing Congressmen on the subject, you are doubtless aware of the restrictions which are thrown around me, as Secretary of the Smithsonian Institution, in regard to interfering with any matter before Congress unless it belongs directly to my own work, or unless I am invited to express my opinion to the party having the power to act. I can say to you that I consider you in every way competent to do the work proposed; and that the interests of science and education are closely concerned in the original plan being carried out and the results published. A large sum has been expended towards the presentation of the report to which you refer; and it would be a great pity not to authorize an additional outlay to finish it. I can safely say that the men of science of both Europe and America are greatly interested in your researches, and are desirous of seeing them completed and placed at the command of the public.

Yours, truly,

S. F. BAIRD.

Prof. E. D. COPE, *Smithsonian Institution.*

[Geological Museum, Princeton, N. J.]

PRINCETON, November 22, 1886.

DEAR SIR: I understand that there is some prospect of your being able to continue the publication of your great work. I most sincerely hope that this report may prove true, as I regard the part already published as the most important of American contributions to paleontology. In common with all workers in this field, I am exceedingly anxious to see the work carried forward to a completion worthy of such a splendid beginning.

If you can make any use of this letter, I shall be glad to have you do so.

Very respectfully,

W. B. SCOTT,

Professor of Geology, College of New Jersey, Princeton, N. J

Prof. E. D. COPE, *Philadelphia.*

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O. M. LARAWAY, POSTMASTER.

L E T T E R

FROM

THE POSTMASTER GENERAL,

With inclosures, recommending that the account of O. M. Laraway, postmaster, Minneapolis, Minn., be credited with amount of loss by burglary, and that an appropriation be made therefor.

JANUARY 8, 1887.—Referred to the Committee on Claims and ordered to be printed.

POST-OFFICE DEPARTMENT,
OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., January 6, 1887.

SIR: On the night of the 8th of July, 1886, the post-office at Minneapolis, Minn., was entered by burglars, and postage-stamps to the amount, as near as can be ascertained, of \$15,330, with which O. M. Laraway, then postmaster, is charged in his accounts with this Department, were stolen, and the same have not, nor has any part thereof, been recovered by him.

The late postmaster has presented his claim to this Department, under the provisions of the act of March 17, 1882, entitled "An act authorizing the Postmaster-General to adjust certain claims of postmasters for loss by burglary, fire, or other unavoidable casualty" (22 Stat., 29), for credit for the amount of stamps thus lost.

The claim has been carefully investigated by this Department and the facts ascertained. It appears that said burglary actually occurred, and that the loss in stamps is satisfactorily proved to be as large as claimed and above stated. According to the principles applied by this Department in the consideration of such claims under said act as the Postmaster-General is authorized to adjust, it does not appear that the postmaster was guilty of such fault or negligence in the premises as to prejudice his claim for relief.

Pursuant to the requirement of said act I herewith transmit said claim to Congress, together with the reports, affidavits, and depositions pertaining thereto, and a summary of the facts and opinion thereon by the Assistant Attorney-General of this Department, and I respectfully recommend that credit on the account of said O. M. Laraway to the amount of \$15,330 be authorized and appropriation made therefor.

Very respectfully,

WM. F. VILAS,
Postmaster-General.

Hon. JOHN G. CARLISLE,
Speaker House of Representatives.

POST-OFFICE DEPARTMENT,
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL,
Washington, D. C.

Minneapolis, Minnesota.—O. M. Laraway, postmaster, claims credit to the amount of \$15,330 for postage-stamps lost by burglary July 8, 1888.

EVIDENCE.

1. In an affidavit made by the claimant July 17, 1886, he sets forth that on the night of July 8, 1886, at about 1 o'clock in the night-time, he sustained a loss of postage-stamps, stamped envelopes, newspaper wrappers, and postal cards, resulting from burglary, and without fault or negligence on his part; that, to the best of his knowledge and belief, the value of the stamps, &c., so lost is \$15,330; that there were in his possession after said loss occurred postage-stamps, &c., of the total value of \$38,560.98 and no more: that his belief as to the value of the stamps, &c., so lost is based upon the following calculation, viz:

Stamps, &c., on hand July 1, 1886.....	\$56,616 29
Error in account of June 30, 1886.....	600 00
Total to be accounted for.....	57,216 29
Stamps, &c., sold from July 1 to July 8, 1886	\$3,325 31
Stamps, &c., on hand after the loss occurred.....	38,560 98
	41,886 29
Loss.....	15,330 00

The "error" referred to is stated as having occurred from reporting sales at \$600 more, and stamps, &c., "on hand" as \$600 less, than the correct amounts to be accounted for June 30, 1886.

The claimant further states that from July 1, 1886, to and including July 8, 1886, up to 5 o'clock p. m., the amounts received from the sale of stamps, stamped envelopes, newspaper wrappers, and postal cards are as follows, viz:

July 1	\$317 40
July 2	629 90
July 3	487 04
July 6	577 35
July 7	752 50
July 8, (to 5 p. m.)	505 20
And that the sales from 5 p. m. to the close of business July 8, 1886, are estimated at.....	55 92
Total.....	3,325 31

With reference to the error in his report, above alluded to, the claimant states that in making his quarterly report to the Department June 30, 1886, he erroneously reported the value of stamps, &c., sold as \$600 more than the actual amount, and the amount on hand as \$600 less than the actual amount; that the error occurred in the operation of consolidating the several accounts kept in the office, and was not discovered until after said report had been transmitted to the Department.

He further states that on the night of July 8, 1886, some party or parties, to him unknown, entered the stamp department of said office, probably by picking the lock to the door thereof, and gained access to the contents of a safe located therein, by drilling into the door thereof on a line between the center of the combination dial and the handle of the door, by which means the connecting bar was reached and the lock turned; that on the night of said burglary, as was the regular custom, several gas jets were kept burning in the office all night, and a clerk

was at work in the mailing department until 2 o'clock, and that the said safe was one which was purchased by the Post-Office Department in the year 1882.

He therefore claims a credit of \$15,330.

2. The value of the stamps, &c., lost by the burglary are estimated by the Department as follows, viz:

Amount reported on hand June 30, 1886.....	\$56,616 29
Estimated sales to July 8, 1886, based upon reports for two preceding quarters.....	\$4,482 16
Amount reported on hand after the burglary.....	38,560 98
	43,043 14
Estimated loss	
	13,573 15

If, by reason of the error mentioned by the claimant, there be added to the amount "reported on hand June 30, 1886," the sum of \$600, the estimated loss is thereby increased to that extent, viz, to \$14,173.15; and if the amount reported sold during the previous quarter be decreased by the same amount, the average amount sold daily, viz, \$560.27, upon which the foregoing estimate is based, will be reduced to \$556.95, and the estimate would be as follows, viz:

Amount reported on hand June 30, 1886.....	\$56,616 29
Error.....	600 00
Total to be accounted for.....	57,216 29
Estimated sales to July 8, 1886.....	\$4,455 60
On hand after the burglary	38,560 98
	43,016 58
Estimated loss.....	
	14,199 71

Between this estimate and that of the claimant there is a difference of \$1,130.29, which, in view of there having been two holidays during the previous week, during which the sales would naturally be somewhat reduced, is not remarkable.

3. The circumstances of the burglary were investigated by Post-Office Inspectors George B. Kidder and F. N. Bassett, from whose report, dated July 17, 1886, the following extracts are made, viz:

We found that the safe which was drilled by the burglars on the night of the 8th instant was situated in the stamp-clerk's room, an inclosure in one corner of the lobby, entirely separate from the main office. This inclosure is provided with a door and three small windows through which stamps can be sold. It appears that the burglars entered the lobby through the front doors, which have heretofore been left open all night in order that the patrons of the office might have access to their boxes after office hours, and gained an entrance to the stamp-room by raising one of the small windows mentioned, and opening the door from the inside. One of the front windows in the building, which forms one side of this inclosure, is frosted from the bottom nearly half-way up to the top, making it impossible for a person standing on the sidewalk to see inside, and the partition forming the side and end of the inclosure on the lobby is solid wood-work from the floor to the height of 8 or 9 feet, so that, once in the room, the burglars were safe from detection. They drilled the safe in the usual manner, and when they departed left some of their drills and other tools behind them, stealing a horse and wagon from the alley in the rear of the post-office with which to convey their plunder to a safe hiding place.

A more favorable night for burglars' operations than that of the 8th instant cannot well be imagined; heavy showers of rain, accompanied by thunder and lightning, following each other from early in the evening until two or three o'clock the next morning.

It is impossible to say at what hour the burglary was committed, but from the fact that the night-mailing clerk finished his work and went home about 1.30 a. m., and that from that hour until 6 a. m. the office was without an official occupant, it is presumable that the work was done after the first-mentioned hour and before the

storm ceased, as the wagon tracks in the alley were almost entirely obliterated by the rain.

* * * * *

Postmaster Laraway claims that he lost \$15,356.87^{*} in stamps and money, and we are satisfied, from a careful inspection of his office and a thorough examination of his accounts, that he lost every penny he says he did.

On June 29th he received \$27,550 in stamps. When these arrived one unbroken original bundle of two hundred thousand 2's, value \$4,000, remained in the safe in the stamp-room. To this he added of the new stock two bundles of 2's, being four hundred thousand, value \$8,000, and two bundles of 1's, being four hundred thousand, value \$4,000. Total value in unbroken bundles in safe in stamp-room \$16,000.

The remainder of the stamps received June 29th was disposed of as follows: Two bundles of 2's, value \$8,000, were placed in the safe in the registry-room, and one bundle, value, \$4,000, in the safe in the postmaster's private office; one-half bundle, or one hundred thousand 1's, value \$1,000, was also placed in the latter safe, as well as all the stamps of a larger denomination than 1's and 2's, amounting to \$2,550.

Out of the safe in the stamp-room the burglars took the three bundles of 2's and one of the bundles of 1's (total value \$14,000), also \$26.87 (estimated) in cash, and \$1,330 in stamps which were charged to the stamp-clerk, who, at 5 p. m. on the 8th instant turned over the cash balance on hand, viz, \$205.20, to the postmaster, leaving the amount of stamps, envelopes, &c., charged to that office at that time \$4,968.22.

Stamps were sold up to 7 p. m., when the stamp-room was closed for the night. In the morning an invoice of the stock showed but \$3,582.30 in stamps, envelopes, &c., and \$29.05 in cash.

Postmaster Laraway's estimate of sale of stamps of \$55.92 between 5 and 7. m. is undoubtedly a correct one. (See his affidavit, as well as the affidavits of the assistant postmaster, stamp-clerk, and assistant stamp-clerk herewith, which are made part of this report.

We respectfully call attention to the fact that, although each of the four safes with which the office is provided * * * contained at all times several thousand dollars in stamps or cash or both, and the lobbies in the front of the building were left open to the public all night, no watchman was provided for the interior of the building, and no one kept on duty after a late hour at night, it being understood that the night-mailing clerk should go home as soon as his work was completed, about midnight or a little later.

The owner of the building informed us, however, that he paid something for the services of a private night-watchman who patrolled a portion of the business district of the city, but this watchman was not on duty on the night of the 8th instant.

One of the two sash-doors opening on the alley in the rear of the building has for some time been without glass, its place being taken by boards nailed on in a very insecure manner. The rear windows are fastened simply by a catch; and only two or three nights before the burglary one of the police patrol found one of them open, after, as it supposed, the night clerk had locked the office and gone home.

The affidavits referred to by the inspectors (with the exception of the postmaster's, which is the first above cited) are as follows:

STATE OF MINNESOTA,

County of Hennepin, ss :

T. E. Hughes, being first duly sworn, doth depose and say that he now is and for more than six months last past has continued to be deputy postmaster of the post-office located in the city of Minneapolis, in the State of Minnesota.

That he has read the claim for credit or disbursement (*sic*) made by said postmaster and sworn to on this 17th day of July, A. D. 1886, and hereto attached, and knows the contents thereof. That he is personally acquainted with the accounts of said Laraway, kept as said postmaster, and knows of the facts in relation to the error mentioned in item number 25½ of the said claim for credit or disbursements, and that the facts in relation thereto are as set forth therein.

That deponent's attention was first called to the error mentioned in item 25½ by said O. M. Laraway on the 6th day of July, A. D. 1886, and that at that time said Laraway stated to deponent that in his quarterly report to the Department of June 30, 1886, an error of \$600 had occurred in the statement of stamps, &c., on hand and the amount of stamps, &c., sold during the quarter; that the amount of stamps sold for the quarter was made by said error to appear to be \$600 more than the actual amount, and the amount of stamps on hand as \$600 less than the correct value; that the cause of the error was due to the consolidation of the several accounts kept in the office and that he did not discover the error until after said report of June 30 had been forwarded to the Department.

And further deponent saith not.

T. E. HUGHES.

STATE OF MINNESOTA,
County of Hennepin, ss :

George W. O'Leary, being first duly sworn, deposes and says that on the 8th day of July, 1886, he was and for a long time prior thereto had been and ever since has continued to be assistant stamp-clerk in the post-office in the city of Minneapolis, in the State of Minnesota.

That his business was to assist Frank A. Laraway in her business as stamp clerk at said office.

That as such assistant stamp-clerk he was in said post-office during the 8th day of July, 1886, aforesaid up to and including the hour of 7 o'clock p. m., assisting said Frank Laraway aforesaid. That all the stamps and cash on hand then in the possession of said Frank Laraway as such stamp-clerk were placed in said safe, and that said safe was securely locked and fastened by deponent thereafter, and that while the same contained said stamps and the money, and that said safe was then located in said post office.

That deponent, from his best knowledge, information, and belief, estimates the cash on hand as aforesaid at that time at \$55.92; and deponent further says that at the time said safe was locked as aforesaid there was contained therein, having been placed therein by the postmaster of said post-office, three unbroken packages of 200,000 each of two-cent stamps, and two unbroken packages of 200,000 each of one-cent stamps.

That on the following morning, the 9th of July, A. D. 1886, deponent returned to said office, and discovered that said safe had been broken into by some person or persons unknown, and that four of said unbroken packages were missing, and that one of said five packages was then lying on the floor in front of the safe.

And further deponent saith not.

GEO. W. O'LEARY.

STATE OF MINNESOTA,
County of Hennepin, ss :

Frank A. Laraway, being first duly sworn, doth depose and say that on the 8th day of July, A. D. 1886, she was and for a long time prior thereto had been stamp-clerk in the post-office in the city of Minneapolis, in the State of Minnesota. That on the said 8th day of July, A. D. 1886, she had in her possession as such stamp-clerk at the close of business on that day, at or about the hour of 7 o'clock p. m., postage-stamps, stamped envelopes, paper wrappers, and postal cards amounting in all to the value of \$4,968.22, less \$55.92, which amount she estimates upon her best knowledge, information, and belief was in cash. That all of said postage-stamps and cash were placed and kept in a safe located in said post-office. That at the hour aforesaid said safe was securely locked, and then contained said money and stamps.

And deponent further says that on the following morning, to wit, July 9, A. D. 1886, she returned to said post-office and discovered that said safe had been broken into by some person or persons unknown to deponent, and a portion of said stamps and cash, as more particularly hereinafter stated, had been taken out of said safe and carried away.

That immediately thereafter she, with others under her direction, made an invoice of the stock of postage-stamps, stamped envelopes, paper-wrappers, and postal cards then in her possession, which invoice showed that she then had on hand postage-stamps, stamped envelopes, paper-wrappers, and postal cards to the value of \$3,582.30 and \$29.05 in cash, leaving a balance missing of \$1,356.87, from which, deducting the \$26.87 cash as aforesaid, leaves a balance of \$1,330 as the value of the postage-stamps, stamped envelopes, paper-wrappers, and postal cards missing as aforesaid.

And deponent further says that in addition to the stamps and money as aforesaid inclosed in said safe there was also inclosed therein at the time the same was locked as aforesaid three unbroken packages of 200,000 each of two-cent stamps and two unbroken packages of 200,000 each of one-cent stamps, which had been placed therein by the postmaster of said post-office for safe keeping.

That when she returned to said post-office, on the said 9th day of July, as aforesaid, and discovered that said safe had been broken open, she discovered that four of these packages were missing, and one of them containing one-cent stamps lay on the floor in front of the safe.

And further deponent saith not.

FRANK A. LARAWAY.

On the 8th December, 1886, the case was returned to the chief post-office inspector, with reference to the inspector's statements in which negligence is imputed to the postmaster, and he was requested to cause a further investigation to be made, in connection with United States

attorney for the district of Minnesota, with the object of determining whether, and if so, to what extent, the negligence of the postmaster contributed to the loss.

On the 31st December, 1886, the case was returned by Inspector Kidder with the following report, viz :

In returning the above-numbered case, relating to robbery of Minneapolis post-office, I have the honor to report that I proceeded to Minneapolis on the 15th of December, where I met United States District Attorney George N. Baxter and his assistant, D. W. Lawler, and United States Commissioner Robert R. Odell. I furnished the attorneys with all the facts in connection with the case in my possession, and remained with them one day, when I was recalled to Chicago by telegram, leaving the case with United States district attorney. Herewith is the case and all the evidence submitted by O. M. Laraway and others.

[NOTE.—The evidence referred to by the inspector consists of the depositions of O. M. Laraway, late postmaster; Frances M. Laraway, superintendent of the stamp department; George W. O'Leary, assistant stamp-clerk; George L. Butler, mailing clerk; Clarence J. Bragdon, superintendent of outgoing mails, and Carroll P. Cole, of the Merchants' Police.]

OPINION.

By the evidence submitted in this case, including the depositions taken before the United States commissioner at Minneapolis, Minn., it appears to be clearly proved—

1. That the post-office was entered on the morning of July 9, 1886, in the night-time, between the hours of 1 and 3 o'clock, and one of the safes therein, containing a large quantity of postage-stamps, was drilled, and its combination lock broken and forced open by expert burglars, and the contents, consisting of postage-stamps, were taken by the burglars and carried away.

2. That the amount of stamps taken was probably as much as the postmaster claims, viz, \$15,330. The testimony of the postmaster and his clerk employed in the sale of stamps is quite positive, and their data appear to be accurate, that that amount was taken. The inspectors who investigated the case are also satisfied that the loss was fully as great as claimed. The Department estimate of the loss places it at about \$1,130 less than the postmaster claims; but it is to be noted that the Department estimate is based upon average daily sales for the preceding two quarters, while the postmaster's estimate rests upon his actual sales from the first day of the quarter. Besides, the quantity in the safe which was broken open is positively sworn to by two witnesses. The loss can be safely estimated at \$15,330, the amount claimed by the postmaster.

3. There is nothing in the evidence pointing to a suspicion that the postmaster or any of his clerks or employes were in collusion with the burglars, or in any way implicated in the robbery.

4. It does not appear that any fault or negligence can be imputed to the postmaster. The safe in which the stamps were kept was carefully locked; it was one which the Department furnished to this post-office expressly for use in storing stamps. The stamp-clerk's office was in a somewhat exposed part of the building, but this seems to have been necessary for the public convenience. The post-office inspectors call attention to the fact that no watchman was provided for the interior of the building, although the four safes each contained several thousand dollars' worth of stamps, and that no one was kept on duty after a late

hour of the night. In view of all the circumstances, I am not prepared to say that this was negligence on the part of the postmaster. No allowance for a night watchman was made to him. Usually there was a private watchman, employed by the owner of the building, on duty in and about the building and its vicinity, and the postmaster had every reason to suppose that he was on duty that night, although by reason of sickness in his family he was not. A policeman of the city had his beat in front of the post-office, and had he not retired within a hallway near by, his attention would probably have been attracted to the work of the burglars.

With such safeguards about the office the postmaster was justified, in my judgment, in keeping the property in the manner he did. Furthermore, it was usual for one of the distributing clerks to work in the post-office during the night and until after daylight in the morning, but on this occasion, he left the office earlier than usual, by permission of the superintendent of the mails. But the postmaster had every reason to suppose that there was some one in the post-office during the hours in which the burglary was consummated.

These facts appear to me to warrant the postmaster in supposing that the building was properly guarded against burglary, and to exonerate him from maintaining at his own expense a watchman in the post-office. And, under the circumstances, it was not negligence to permit the door of the lobby to be left open during the night. This is a quite usual practice, and had been the custom at this post-office for many years; and in so public a place, with a private watchman and a policeman patrolling near by, and a night clerk usually at work within, the permission of this practice was not an act of negligence, at least of so grave a character that it should throw the onus of this loss upon the postmaster.

I have, therefore, the honor to advise that this claim is one proper to be recommended to Congress under the act of Congress approved March 17, 1882 (22 Stat., 29), for allowance of credit to the amount claimed.

EDWIN E. BRYANT,
Assistant Attorney-General, Post-Office Department.

[Form No. 219.]

Claim for credit or reimbursement under act of March 17, 1882.

STATE OF MINNESOTA,
County of Hennepin, ss :

On this 17th day of July, 1886, before the undersigned, a notary public in and for said county and State, personally appeared Orlo M. Laraway, who, being by me first duly sworn, on oath says that he was postmaster at Minneapolis, in the county of Hennepin and State of Minnesota, on the 8th day of July, 1886; that on said date, and at about 1 o'clock in the night time, as nearly as he can determine, he sustained a loss of postage-stamps, stamped envelopes, newspaper wrappers, and postal cards, then in his hands as such postmaster, resulting from burglary, and without fault or negligence on his part; that the circumstances of such loss, and the cause and nature thereof, are fully set forth in the affidavits filed herewith as a part of this petition; that the value of postage-stamps, stamped envelopes, postal cards, and newspaper wrappers so lost or destroyed is, to the best of his knowledge and belief, \$15,330.

He therefore claims credit under the aforesaid act of Congress for the amount of the said loss, viz, for postage-stamps, stamped envelopes, postal cards, and newspaper wrappers, \$15,330.

The petitioner states that immediately after said loss occurred he had in his possession postage-stamps, stamped envelopes, postal cards, and newspaper wrappers of the total value of \$38,560.98, and no more; that he also had in his possession money-order funds to the amount of ———, and no more; that his belief as to the value of the postage-stamps, stamped envelopes, postal cards, and newspaper wrappers so lost or destroyed is based upon the following calculation, viz:

Stamps, &c., on hand July 1, 1886 (beginning of quarter).....	\$56,616 29
Error in quarterly report explained in No. 56 of this sheet.....	600 00

Total to be accounted for.....	57,216 29
Stamps, &c., sold from beginning of quarter to date of loss....	\$3,269 39
Stamps, &c., sold from 5 p. m. to 7 p. m. on day of loss, estimated	55 92
Stamps, &c., on hand after loss occurred	38,560 98

Total saved and sold.....	41,886 29
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Lost or destroyed	15,330 00
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Detailed statement of receipts from sale of stamps, &c., from July 1, 1886, to July 8, 1886, both dates inclusive, viz:

July 1	\$317 40
July 2	629 90
July 3	487 04
July 6	577 35
July 7	752 50
July 8, to 5 p. m	505 20
Estimated sale at stamp-window from 5 to 7 o'clock p. m. July 8	55 92
Total.....	3,325 31

The petitioner further states that in explanation of item 25½ there occurred in his quarterly report to the Department June 30, 1886, an error of \$600 in the statement of stamps, &c., on hand, and the amount of stamps, &c., sold during the quarter, *i. e.*, the amount of stamps sold for the quarter was made by said error to appear to be \$600 more than the actual amount, and the amount on hand as \$600 less than the correct value, the error occurring in the operation of consolidating the several accounts kept in the office, and was not discovered until after the report had been forwarded to the Department. To properly adjust said error the item No. 25½ is introduced.

The petitioner further states, in explanation of the robbery, that on the night of the 8th day of July, A. D. 1886, some party or parties to him unknown entered the stamp department of his office, probably by picking the lock to the door thereof; that they obtained access to the contents of the safe located in said stamp-room by drilling into the door thereof, directly on a line between the center of the combination dial and the handle of the door, by which the connecting bar was reached and the lock turned.

That on the night of the robbery, as was the regular custom, several gas-jets were kept burning in the post-office all night. He further states that a clerk was at work in the mailing department of the office until 2 o'clock on the night of the robbery. Also, that a night-watchman was employed by the owner of the building in which the post-office was located.

The safe which was opened and robbed as stated was purchased by the Post-Office Department in 1882 of Geo. L. Damon, Boston, and was labeled "Stamp Department, Minneapolis post-office;" "Improved Patent Cut-off."

ORLO M. LARAWAY,
Postmaster.

Subscribed and sworn to before me this 17th day of July, A. D. 1886.

[SEAL.]

T. R. NEWTON,
Notary Public, Hennepin County, Minn.

Post-office at Minneapolis, Hennepin County, Minnesota. O. M. Laraway, postmaster, claims credit for loss sustained in the burglary of his post-office on the 8th day of July (night).

Amount claimed	\$15,330 00
Amount saved.....	38,560 98
Reported amount of stamps, &c., on hand June 30, 1886, as per returns to the auditor	56,616 29
Deduct estimated sales for 8 days (the average daily sales being \$560.27..	4,482 16
Leaving the probable amount on hand at close of business on the 8th July, 1886	52,134 13
Amount saved	38,560 98
	13,573 15

Memoranda:

Sales 1st quarter, 1886..... 49,962 58
 Sales 2d quarter, 1886..... 51,445 40

No subsequent reports received.

A. D. HAZEN,
Third Assistant Postmaster-General.

OFFICE OF ASSISTANT ATTORNEY-GENERAL FOR THE POST-OFFICE DEPARTMENT,
 Washington, D. C., July 22, 1886.

Respectfully referred to the Third Assistant Postmaster-General, and his attention called to the inclosed statement of the claims of the postmaster at Minneapolis, county of Hennepin, State of Minnesota.

Please return this with such information as you may have in your office bearing upon the claim; particularly as to the amount of postage-stamps, stamped envelopes, newspaper wrappers, and postal cards in the hands of the postmaster at the time of the alleged loss.

Please reply on the inside of this sheet.

EDWIN E. BRYANT,
Assistant Attorney-General, Post-Office Department.

UNITED STATES OF AMERICA,
 District of Minnesota:

In the matter of the investigation of the post-office robbery at Minneapolis, Minn., occurring on the night of July 8, 1886.

Testimony of witnesses produced, sworn, and examined before R. R. Odell, esq., United States circuit court commissioner at Minneapolis, Minn., touching the claim of Orlo M. Laraway, late postmaster at said Minneapolis, for reimbursement under the act of Congress of March 17, 1882.

Present, George N. Baxter, esq., United States attorney; Daniel W. Lawler, esq., assistant United States attorney; and George B. Kidder, esq., post-office inspector.

ORLO M. LARAWAY, being first duly sworn and examined, says:

Question. State your name, age, and present residence.—Answer. My name is Orlo M. Laraway; my age is fifty-four years; present residence is Minneapolis, Hennepin County, Minnesota.

Q. Were you the postmaster at Minneapolis, Minn., on the 8th day of July last?—A. I was.

Q. While such postmaster did you give personal attention to the duties of the post-office; and did you give such attention on the 7th and 8th days of July, 1886?—A. Yes; I did.

Q. At what time did you leave the office on the night of July 7?—A. I left the office on the night of July 7, A. D. 1886, at 5 o'clock.

Q. What amount of stamps were usually permitted by you to remain in the safe in the post-office?—A. My entire stock of stamps were divided among three different safes. My stock entire of stamps and stamped envelopes was about \$52,000—mostly in stamps. On receiving stamps once a quarter I had to store them in the three safes—at that time about \$15,000 to \$16,000 in each safe—having just received, eight or nine days previous to the robbery, stamps from Washington.

Q. During what hours of the night were the post-office rooms left without any of the clerks or employes in them?—A. I did not suppose there was any time when the office was left, without any one in the office. In the old office, before it burned, I had a man all night, and after we got into the new office I gave instructions to have a man there all night to C. J. Bragdon, superintendent of mails, and he informed me that he had work for one George L. Butler and he would be there all night.

Q. Was any one required to sleep in or remain on watch in the post-office on the night of or at about the time of the burglary of July 8 last?—A. Mr. Butler was at work there all night. Not to sleep there; he was mail clerk, and was not hired to watch, but the object of having him work there all night was to watch, as we wanted a man there all night, and this was my orders to Mr. Bragdon.

Q. When the office was left alone at night what precautions were taken to guard the property in it; were the outer doors locked or left open; were they so bolted or barred that burglars could not enter the building without using force?—A. Stamps were put in the safe and securely locked, and the rooms in which the safes were located were securely locked. The gas was left burning all night, and a man to work in the office. The front outer doors were left open so that people could have access to their boxes; this has been the custom here for the past twenty years. The rear doors were always securely locked when we left the office.

Q. By what mode of entrance did the burglars gain access to the safe which was blown open?—A. They must have come in through the lobby and pried up the window into the stamp-room, and then they could reach their hand around and slide the bolt, it being, I think, a catch lock, and then opened the door and went into the room where the safe was that was robbed. The little window I speak of is from the stamp-room into the lobby through which stamps were sold, and it was fastened with a bolt, and it was forced open.

Q. Describe the safe and state the condition in which it was found the morning after the burglary?—A. The safe was the one the department had furnished and was Geo. L. Damond make, Boston, Mass., and was lettered by the department designating for what purpose it was to be used, "stamp department, Minneapolis post-office," conveying the idea for keeping stamps. It is a large safe with combination lock, I should think about 5½ feet high, 4½ feet wide, and 3 feet deep. The next morning I discovered the door open and a hole drilled near the combination. They had put a punch in and broke the combination lock and then opened the door, and the papers were strewn about the floor.

Q. What were your orders or instructions to your clerks in regard to leaving the office at night in respect to locking the outside doors leading to the post-office?—A. My instructions were to have one man there all night. The other clerks left at their usual hours of leaving. I gave this order to C. J. Bragdon to have a man there all night, and he reported to me that Mr. Butler would be there all night. Mr. Bragdon was superintendent of mail and had charge of the men in that department. The outside doors leading to the lobby were never locked, as I have stated. All other doors were to be securely locked.

Q. Were these instructions complied with on the night in which the burglary was committed?—A. All the doors were locked except the front doors leading to the lobby, which were left open for reasons I have given. I subsequently learned that my orders to have a man there all night, were on the night of the 8th day of July last not complied with. I learned that Mr. Butler left there about half past one the morning of the 9th day of July, 1886.

Q. Was there any vault or safer receptacle in the post-office than the safe in which the stamps were kept?—A. No. There was no vault or any better safe.

Q. State what care or precaution you took to avoid a burglary of the office while you were postmaster, and especially about the time of and preceding the burglary.—A. I looked after the office generally to see that all doors were properly locked and kept a man there, and I saw Mr. Stillman, the owner of the building, and talked with him about having a special watchman for the building outside, and he employed a watchman, and I have seen him on duty. I also notified the department that it was not so well adapted for post-office purposes as the old office. These precautions were taken when we moved into the Stillman Block, and continued until the time of the robbery. No extra precautions were taken in the month of July. We had been in the new office about three months when the robbery occurred.

Q. State generally any other facts or matters pertinent to the question whether you exercised due care of the Government property in your possession in the post-office when the burglary occurred.—A. I did exercise every precaution I thought necessary; I was there in person usually from 7 o'clock in the morning until 6 o'clock at night, and exercised as much care and precaution as I would of my own private business.

Q. The man who remained in the office all night was the night mail clerk?—A. Yes.

Q. What time did he go on duty?—A. I cannot tell, as he was under Mr. Bragdon.

Q. Did you ever give this man Butler any instructions about watching the office?—

A. Only through Mr. Bragdon.

Q. When did you first speak to Mr. Bragdon about having a man to watch the office?—

A. I think about the 15th day of June, 1886, but it had always been the custom to have a man work on the mail nights and watch the office.

Q. Was it the understanding with the man who watched when he got through with his mail he could go home?—A. No.

Q. Was it the understanding that he should remain after he got through with his mail?—A. Yes; he was to remain until some one came in the morning and relieved him.

Q. What time would a person come in the morning to relieve this man?—A. I think about four o'clock, although Mr. Bragdon would attend to that matter.

Q. Do you know who the person or persons were who came in the morning?—A. I do not. Sometimes one and sometimes another. They would change about. The distributing clerks would get there about half past six o'clock. The man to relieve the night man would get there to distribute the early morning papers at about four o'clock.

Q. How far from the place where the night mail clerk was at work is it to where the safe was that was robbed?—A. When he distributed mail it was about seventy feet from the stamp office, but he was obliged to come often to come within about fifteen feet of stamp office to get letters from the drop boxes.

Q. Would this bring him in sight of the stamp office?—A. He would have to look through glass in the partition between office and lobby, and then through glass to stamp room in the corner.

Q. Please describe these glass partitions.—A. It was glass screen work, similar to other post-offices.

Q. Is that glass transparent?—A. Into the main office in some places it is, but mostly frosted, and the glass in the stamp room is all frosted, to keep people from seeing what was going on. I don't think you can see through main office into the stamp room.

Q. State whether you told Mr. Bragdon to instruct the night clerk as to making the rounds of the outer office.—A. I did not. It was never considered necessary for him to do that, as there being an outside watchman for the building in the rear and a policeman in front of the building.

Q. Who was the man employed, and by whom, to watch the rear of the building?—A. It was Mr. C. P. Cole, and he was employed by Mr. Stillman, the owner of the building.

Q. Was Mr. C. P. Cole one of the merchant police?—A. Yes, I believe he was.

Q. Do you know the extent of his beat on July 8, 1886?—A. I do not.

Q. Do you know what care he exercised in watching the building?—A. I do not. He spoke to me something about receiving additional pay from the post-office and I told him the Department did not furnish any funds for that purpose.

Q. How long before the robbery did this conversation occur?—A. I should think a month or six weeks.

Q. You say there was a policeman in front of the building. Was he one of the city police force?—A. Yes; he was a city policeman and his beat was in front of the office. The night of the robbery the policeman on that beat was, I have been informed, J. M. Allen, and it rained very hard, thundered and lightened, and I understand while the robbery was going on Allen, the policeman, stood in a hallway near by.

Q. Please describe the window in the stamp office facing the street.—A. It is a large plate-glass window. The lower part being frosted up about 5 feet from the sidewalk.

Q. Was there any light in the stamp office?—A. No. A gas jet left burning all night in the main offices, so it was light in the lobby which received light from the other room. There was no place for a light in the stamp department. No fixture in there. I had often demanded of Mr. Stillman to place a fixture there and he would put us off with a promise of putting in an electric light.

Q. Could a person standing in the street look through and get a view of the stamp office?—A. I don't think they could ordinarily. They could by going up and looking over the frosting.

Q. When was that window frosted?—A. It was some time in the month of June when they were fitting up the office.

Q. What was the object of this frosting?—A. It was to protect the stamp office from the public looking through; it was done by the owner of the building, by orders, I presume from the stamp clerk.

Q. Was there any curtain or blind on the window?—A. There was not.

Q. Please describe the nature of the partition between the stamp office and the lobby—A. It is a hard wood partition with openings for the sale of stamps, which openings were closed by glass windows frosted; the wood work extended up about 8 feet from the floor, and the rest of the way to the ceiling it was glass screen work, same as between the lobby and the main office.

Q. Please describe the glass window which is supposed to have been opened by the robbers?—A. This window is about 14 inches wide by 20 inches in height, and about 2 feet from the door which enters the stamp room, and was fastened down by abolt.

Q. Describe the lock on the door?—A. It was a common mortise lock. We had used it in the old office.

Q. How many safes and vaults were there in the office at this time?—A. There were four safes and no vaults. There were three of these Damon safes and a smaller one of a different make in the money-order department; there was one safe lettered by the Department when we received it, "Cashier, Minneapolis Post-Office," and was kept in the postmaster's room in main office and was used for money, and on the 8th day of July last, contained between \$10,000 and \$12,000 worth of stamps. The second safe was lettered "Register Department, Minneapolis Post-Office," and was used for keeping registered letters, and at the time of the robbery contained \$8,000 worth of stamps. The third safe was lettered "Stamp Department, Minneapolis Post-Office," and at the time of the robbery contained over \$18,000 in stamps, and \$15,000 were taken. It contained some money which was taken and which I have made good to the Department.

Q. State when you received these stamps and when they were deposited in the safe, as you have stated.—A. About the 30th day of June, 1886.

Q. What was the amount of the stamps put in this safe about the 30th day of June?—A. The amount I had stored there was \$16,000 worth; the others were those in charge of the stamp clerk, from which she was selling, and when she required more stamps she would come to me for them. These stamps stored by me were in original packages, which the stamp clerk was not allowed to open.

Q. What was the amount of stamps the stamp clerk had at her disposal?—A. She had about \$2,700 worth of stamps in all.

Q. What amount of space would the quarterly supply referred to take up?—A. I should think about 8 square feet of space or a block about 2 feet square.

Q. What is your relation to Miss Francis A. Laraway, the stamp clerk?—A. She is my niece.

Q. Do you desire to make a statement? If you do you are at liberty so to do.—A. I wish to make a general statement of my connection with the Minneapolis post-office. I was appointed postmaster about the 15th day of June, 1882, and my commission bears date June 21, 1882, and I took possession July 10, 1882, and my commission expired on the 21st day of June, 1886; but I held over until August 2, 1886, when I turned it over to my successor, Mr. John J. Ankeny. At the time I took possession of the office it was located in the Boston Block, corner of Third street and Hennepin avenue, it being on a corner with a side 157 feet on Third street, with twenty-one windows giving ample light to the various departments, and it being all in one room 48 feet wide made it very well adapted for post-office purposes. The room we had answered very well, but the increase of business at the office it began to get a little crowded.

On the 12th day of April, 1886, a fire occurred on the third floor of the building and burned nearly the whole of the inside of the building; we got out the mail and the furniture with no damage to the mails and but little damage to the furniture.

I obtained temporary quarters in the Stillman Block, on Fourth street, between Nicollet and Hennepin avenues, in two storerooms 21 feet wide by 146 feet long each. This is the floor space. No mails were received or sent out the evening of the fire. The next morning the outgoing mails left on time; the incoming mails received and distributed, and were delivered by carriers with a very slight interruption. I fitted the office temporarily by putting in board counters and arranged the old furniture as best we could, and everything was open, no screen work and no connection between the two rooms, and the outside doors were at that time closed and locked at 7 p. m., at the usual hour of closing.

The office continued in this unsettled condition until about June 1, 1886, when the Department made arrangements with Mr. Stillman for permanent quarters and the work commenced towards fixing the office up about this date, and on July 4 had been so far completed as the box sections and screen work put in and stamp room and the outer partition put in and the doors put in with locks and keys; so it was deemed necessary to leave the lobby doors leading from the street to the lobby open, so parties could get to their boxes, as had been the custom here for twenty years.

These quarters were very much smaller than the old office, and no light except the windows in the front and the four windows in the rear. On consultation with the post-office inspector, Mr. Kidder, and Mr. Stillman, the owner of the building, it was decided that the only place for the stamp department was in one of the front corners of one of these stores. This left only about four feet passageway between that and the box section and to corner of box section. During the time they were fixing up the office I staid there one night all night and always had a man to stay there all night. I had no direction to provide a special watchman, and no appropriation to pay one with, but while the office

was in state of confusion incident to fixing up the office I deemed it necessary to keep some one there all the time, and I did have a man there all the time. But after we had got everything in as good shape as we could expect to make it, I did not deem it necessary to keep a man solely for the purpose of watching, but I gave Mr. Bragdon instructions to keep a man working on the mails all night so he could watch the mail matter and stamps. I never supposed for a moment that the stamp department would be molested, as it faced on the street, and was securely locked, and everything of value put in the safe and the safe locked. On the night of the robbery I left the office about 5 o'clock p. m. I remember the night very well, as I was up several times. It was a very dark, stormy night, with repeated shocks of lightning and heavy thunder, and the rain was as heavy as I have ever seen. With a policeman in front and a watchman in the rear and everything securely locked I considered the office perfectly safe and secure.

Q. Mr. Laraway, besides the stamps what where you in the custom of keeping in the safe?—A. In the safe in the postmaster's room I kept the Government funds. It had a burglar-proof chest, so that there was not so much room; I kept the larger denomination of stamps there, and what other room there was I kept other stamps, ones and twos. I also kept my books and papers in there at the time of the burglary. All the space in this safe was full. The safe in the register department was used for registered matter and had no space for stamps. I had to put them in there, and had at the time of the burglary eight thousand dollars worth of stamps. They were always complaining about being crowded, and this safe was always full enough without stamps being put in there, but I had to crowd the capacity of the safes to get them stored. At the time of the burglary this safe was full. The safe in the money-order department contained the money, books, and papers of that department, and there was no space there for stamps, it being quite a small safe. I was very much crowded for safe-room, there being no vault, as there should be in any post-office of the size of this office.

Q. You say that in the safe in the postmaster's office there was a burglar-proof box. Describe this box.—A. It was an ordinary burglar-proof box. It was in the safe when I took charge.

Q. These safes without the box were not considered burglar-proof?—A. I should say not.

Q. Was that the only safe that had such a box?—A. It was.

Q. Did you ever ask the department for a night watchman for the post-office?—A. I don't remember that I ever did. I had once, in the old office, had a room fitted up with a bed in it, and had a man to sleep there. I put in a bill for this expense of bed and fixing up the room and the department disallowed it, and I paid for it myself and had a post-office employé always to stay there. I never regarded a night watchman, as such, necessary.

Q. Did you ever call the Department's attention to the need of a safety vault?—A. I can't tell without going through my correspondence. I think I did state to them that I had nothing but wooden rooms to put my supplies in; that I had no conveniences or safeguards. The Department never consulted me about the location of the post-office except through Inspector Kidder, who came here and advertised for bids. Stillman put in a bid, as also did the Boston Block. I understand that Mr. Kidder reported favorably on the Boston Block proposition.

Q. Leaving aside the character of the post-office in other respects, did you ever complain to the Department or the inspector of the inadequacy of the safe and the absence of the vaults?—A. I did often complain to the inspectors. I would not say I did not complain directly to the Department. I certainly did complain to the inspectors.

Q. What inspectors?—A. Inspector Small, Inspector Childs, and Inspector Kidder.

Q. How near the post-office was a safety deposit-vault located last July?—A. Last July, I suppose there was at that time one in under the Nicollet Bank, within a block, and one in the Loan and Trust Building, within a block—a little further.

Q.—You say at the close of your statement that you considered the office perfectly safe and secure. Do you remember whether or not the morning after the burglary you made a statement about the insecurity of the Stillman Block which was published in the Minneapolis Evening Journal of July 9, 1886?—A. I don't think I made that statement.

Q. Do you remember saying as follows, or in substance as follows: "It's no one's fault. It is only some of the conveniences of the Stillman Block. Convenient, you see, for robbers and anybody but the public. At the Boston Block we had a man sleep in the office, but here there was none, for this old hole has no place for any bed or anything else?"—A. The statement I did make had reference to the fact that there was no place for the stamp room except where it was located in the Stillman Block. I don't think I made just that statement as you have read, but in substance perhaps very near that.

Q. Did you make the statement that it was convenient for robbers?—A. I don't remember whether I did or not. I was very much excited, and might have said some-

thing. Reporters might have come in and talked with some of the clerks, and reported me as having said it. I was always opposed to the post-office being located in the Stillman Block.

Q. It was your impression that at the time of the robbery your instructions with regard to the night clerks staying there all night were complied with, was it not?—A. It was. I supposed a man was there all night. The principal motive I had in keeping a man there all night was to guard against fire and to look after the safety of the mail and mail matters, and I had no apprehension of burglary. I thought the policeman outside was sufficient to guard against burglary.

O. M. LARAWAY.

Miss FRANCES A. LARAWAY, called as a witness and being by me duly sworn, testified as follows:

Question. What is your full name, your age and place of residence?—Answer. My name is Frances A. Laraway; my age is twenty-one years, and I reside in Minneapolis, Hennepin County, Minnesota.

Q. How long had you been employed in the Minneapolis post-office previous to the robbery?—A. Four years; and I am still in the employ of the post-office.

Q. In what capacity were you employed on July 8, 1886?—A. I was superintendent of the stamp department.

Q. How long had you been in charge of this department?—A. About two years.

Q. What were your general duties?—A. I had charge of the stamps, the sale of them, and to supply the department with stamps which I got from Mr. Laraway, the postmaster, and to keep an account of sales and balance my account once a month, and to look after the stamp department generally.

Q. (Diagram shown witness.) Where was your room or office?—A. (Witness points to corner designated on map as stamp department, and says:) In this corner, marked stamp department.

Q. What were your working hours?—A. From 7.30 a. m. until 6 p. m.

Q. By whom was the office closed for the day at the end of business hours?—A. By my assistant, George O'Leary.

Q. At what time?—A. At 7 o'clock.

Q. By whom was the office closed for the day?—A. By my assistant, but he did not have the combination to the safe.

Q. Do you remember the hour you left the office the day of the burglary?—A. About 6.15 p. m. I left my assistant in charge.

Q. Please describe the windows in your department.—A. The windows are frosted about 5 feet up from the floor, and the little windows are about 1 foot wide by 2 feet high, and both the little windows are frosted. Above the window where we sold stamps and the one that was forced open was a small glass, about 1 foot square, that was not frosted or painted.

Q. Did the windows raise or swing on hinges?—A. They raised up.

Q. Did these windows have locks or fastenings on them?—A. They had. The one that was open had the fastening on, and the other two had two on each. The two windows that were not open had a bolt in the side and one on top, which went into a hole in the hard-wood finish. The one that was raised on night in question had three bolts; two fastenings were same as the other windows, and the third bolt was put on the side at or near the bottom as an experiment, and if it worked well they were going to put it on the other windows.

Q. Please describe the lock on the door leading from lobby into the stamp office.—A. There was but one door leading into the stamp office, and it was a hard-wood door with a mortise lock, locked with an ordinary key.

Q. How many keys were there to this door?—A. There were three keys.

Q. Who had charge of these keys?—A. I had one, my assistant had one, and the assistant postmaster had the other one.

Q. How far was the safe from the outside window?—A. I should say it must have been 4 feet from the glass.

Q. Was there any facility for lighting the stamp office?—A. There was none. No gas-fixture there. I asked Mr. Stillman to put one in and he said it would not be necessary, as they would put in electric lights soon.

Q. Was there any electric light or gas-light in front of the office?—A. I don't know. I don't think there was immediately in front of the office.

Q. Was there any facility for lighting the lobby?—A. I don't think there was any. There was in the main office, and it was so near the box section it would shine into the lobby and also into the stamp department.

Q. The morning after the burglary, what time did you get to the post-office?—A. About twenty minutes past seven.

Q. Did you make an examination of doors and windows then?—A. I did.

Q. Please describe the appearance of the doors and windows.—A. The bolt at the top of the window was pushed out entirely from the wood and made a path through the wood—this one next to the door. The door was unharmed and the lock was intact.

Q. Describe the appearance of the office.—A. Everything was out of the safe and strewn about the floor. They had pried open the drawers in the safe. There was lots of matches on the floor and a hole drilled in the safe, and the original wrappers of the stamps were lying on the floor and one broken package of 1-cent stamps on the floor, and some loose 1-cent stamps. A few days afterward I noticed some candle-grease on the ridge or side of the wall.

Q. Was there any candles used about the office by employes?—A. No.

Q. What else did you see about the office on the morning of July 9, 1886?—A. There was a large number of different sizes of drills broken off; a bar of iron or steel; a handkerchief.

Q. Were you the first one there on the morning of July 9, 1886?—A. No; my assistant came and opened the office. There was no one there in my department when I got there. The boy had unlocked the office that morning and then locked it again. (Witness means by boy her assistant.) So I could see what had been done before any one else had knowledge of the robbery. I was the one who gave the alarm and informed the other employes in the office.

Q. Please describe the system by which stamps were issued to you for sale.—A. I made a written requisition for the number I wanted, and they were charged to me in pass-book, and then they were sold by me and accounted for.

Q. Was there any or stated time for making these requisitions, or stated amount?—A. There was not; I called for them as I wanted them.

Q. How many days did you intend the requisition to cover?—A. A few days, as near as I can estimate.

Q. Can you give an idea of the average amount of twos and ones used by you daily during the months of June and July?—A. About 12,000 twos and about 7,000 ones.

Q. When was it that these stamps that were stolen were placed in the safe?—A. It must have been four or five days before.

Q. Who put them in there?—A. I put them in there. Mr. Laraway, the postmaster, brought them up, and I put them in the safe.

Q. About how much space did those stamps take up?—A. Something more than one-third the capacity of the safe.

Q. Please describe the size of an ordinary package.—A. They were nearly square. There were five original packages, each package about one foot square. Each package is a cube, or nearly so—might be 10 inches each way, and a foot wide and a foot thick.

Q. At the time of the burglary about how many stamps were in your charge for sale?—A. About \$3,000 in ones, twos, fours, fives, tens, fifteens and thirtys, and special delivery and periodical of different denominations.

Q. Did you have any original packages such as you have mentioned in your charge for sale?—A. No, sir.

Q. How much room did these stamps you had for sale take up?—A. They were in separate drawers. About eight drawers.

Q. Did they fill these drawers?—No, they did not. They were made to fit a sheet of stamps, and about one inch and a half deep.

Q. Then the stamps which were in the drawers were the only ones in your charge as stamp clerk?—Yes, except about 40,000 out of the drawers; at that time in twos.

Q. How much room did these 40,000 twos take up?—A. About twelve inches one way, ten inches the other, and about four inches deep.

Q. The other stamps were stored there and not at your disposal?—A. They were stored there and not at my disposal.

FRANCES A. LARAWAY.

CARROLL P. COLE called as a witness and being by me duly sworn testified as follows:

Question. State your full name, age and place of residence?—Answer. My name is Carroll P. Cole. My age is 26 years, and I reside at 1107 Twenty-fourth street south, Minneapolis, Minn.

Q. On the 8th of July, 1886, were you a member of the merchants' police of this city?—A. Yes.

Q. What is the merchants' police. Please describe the duties?—A. It is a private organization hired by the subscribers. The duties required are to watch buildings, to guard against burglary and fires.

Q. How many men were there on this force on the 8th of July last?—A. There were only two of us.

Q. You were one, who was the other man?—A. Yes, I was one and S. B. Norton was the other.

Q. What were your hours of service?—A. From 9:30 p. m., until 6 o'clock in the morning.

Q. What was the extent of your beat?—A. I called it two squares up by the post-office.

Q. Where was Norton's beat?—A. His was about two squares.

Q. It was your duty to be on watch all night in one of these squares by the post-office building?—A. Yes, sir.

A. Who directed you to go to work in these two squares?—A. Mr. Stillman is one who directed me. Mr. Norton also directed me.

Q. Who is the first who spoke to you about going on duty there?—A. Mr. Norton, who is one of the merchants' police.

Q. When did he speak to you about it?—A. I have been on the beat about two years, and he spoke to me about two years ago.

Q. When did Mr. Stillman speak to you about it?—A. It was about the time the building was finished and before the post-office went in.

Q. What did Mr. Stillman say to you?—A. I don't recollect, particularly. He told me to keep watch, and if I saw any suspicious characters to look out for them, and if I discovered any evidence of fire to look out for it.

Q. Did he say anything to you about the post-office?—A. No, the post-office was not in at that time.

Q. Did Mr. Stillman ever give you any instructions about the post-office?—A. No, sir. I was to go through the building up-stairs and around, and the post-office was in, and I supposed I was to be responsible for that too.

Q. Did Mr. Stillman ever give you any other instructions save the times you have mentioned?—A. No, sir.

Q. Did any of the post-office authorities ever give you any instruction about watching the post-office?—A. No.

Q. Did Mr. Bragdon ever give you any instruction about the post-office?—A. I don't know who Mr. Bragdon is.

Q. You knew some of the post-office men by sight, did you not?—A. Yes.

Q. Did you go into the office nights while they were at work?—A. Yes, there was a man distributing papers, and I went in there a few nights. I think he got through work about 11 or 12 o'clock at night.

Q. Describe the man who was distributing papers.—A. A smallish man; weight 120 pounds. Come to think about it there were two men; one was a tallish man.

Q. What time of the night was it you went in?—A. From 9.30 to 10.30. I think the youngest man worked there all night for a while, and I went in at different times in the night.

Q. Did you ever go in after 12 o'clock at night?—A. Yes.

Q. How often?—A. Once an hour, as that was the time I was due there. I went in to get a drink of ice-water. It was during the hot weather. I mean I went by the building once an hour and dropped in there occasionally to get a drink of water.

Q. Was there anybody there on these occasions when you went in?—A. Yes, the man distributing papers.

Q. Which one was distributing papers?—A. Sometimes the tall man and sometimes the short man.

Q. You entered the building from the rear?—A. Yes; the doors were always standing open.

Q. Did you have a key to any of the rear doors?—A. No, sir.

Q. Could you enter the building unless some of these men were working there?—A. No.

Q. Were the doors open all night, as you have described?—A. Only when they were working there.

Q. Were they working there all night, as a general thing?—A. Yes; only when the post-office first went in there. Then they only worked until 11 o'clock.

Q. You mean to say as a general thing from 9 p. m. until 6 o'clock next morning the doors were open?—A. Yes.

Q. There were sometimes when they did not work all night?—A. Yes, sir.

Q. State how often this occurred when they were not working there.—A. I can't say. I think it did not occur often when they were not working there.

Q. When you went in you had conversation with these men, did you not?—A. Yes; I can't state what it was about.

Q. Did they say anything to you about watching the post-offices?—A. No; I am positive they did not.

Q. Your business was to watch the rear of the building?—A. I was to watch both the front and rear of the building. I was to keep awake and make the rounds once an hour.

Q. Were you to go inside of the buildings, and this building?—A. I was to go through the hallway up-stairs.

Q. Was it your business to go into this Stillman's building—the post-office department of it?—A. No, sir.

Q. Did you ever go into the front part of the post-office?—A. Not that I ever recollect; except I saw parties going in and I wanted to see what they were up to.

Q. Then it was not your business to go into the front part of the office unless you saw something suspicious?—A. No.

Q. Consequently you did not go into the front part of the office except on these occasions when your suspicions were aroused?—A. No; these were the only occasions when I went in.

Q. Were you acquainted with the city policeman who was on duty on that beat the night of the burglary?—A. Yes.

Q. What was his name?—A. James Allen.

Q. What were the hours of his watch?—A. I can't say.

Q. Do you know the length of his beat?—A. Yes; he went from Fourth street, on Nicollet avenue, to Sixth street, and took in the cross streets as far as the alleyway on the north side.

Q. How many blocks would that be?—A. Two blocks long.

Q. Were you in the habit of meeting him nights when you were on watch?—A. Yes, sir.

Q. Were you on watch the night of the burglary?—A. No.

Q. Not at all?—A. No, sir.

Q. What was the reason?—A. My wife was suddenly taken sick and I had to stay at home.

Q. What time was she taken sick?—A. About the time I was about to leave home. About 9 o'clock in the evening.

Q. Was there any one with you except your wife when she was taken sick?—A. There was a family living downstairs.

Q. Were you acquainted with them?—A. Yes, sir.

Q. Did you need a doctor?—A. I went after a doctor, and it stormed so hard I could not telephone.

Q. Did you get a doctor?—A. No, sir, I did not get him. The doctor we were to have lived about a mile and a half from our house.

Q. Where did you go to get a doctor?—A. I went to a doctor's house, on Nicollet avenue.

Q. How far was that from the post-office?—A. I should think about 2 miles.

Q. Did you notify any person that you were not going on watch that night?—A. No, sir. I tried to notify Mr. Norton, but the storm prevented it.

Q. How many times were you off duty?—A. I think this was the only time during the year.

Q. Do you know where James M. Allen is now?—A. I do not. I heard he left the city. There is another man now on that beat.

Q. When were you first informed of the robbery?—A. The next morning.

CARROLL P. COLE.

GEORGE W. O'LEARY, called as a witness, and being by me duly sworn, testified as follows:

Question. State your full name, age, and place of residence.—Answer. My name is George W. O'Leary. I am 22 years of age, and I reside at 1512 South Fourth street, Minneapolis, Minn.

Q. In July last you were assistant stamp clerk in the Minneapolis post-office, were you not?—A. Yes, sir.

Q. How long had you been employed previous to July 8, last?—A. Eleven or twelve months.

Q. How long had you served as assistant stamp clerk?—A. Eight months.

Q. Describe your duties as assistant stamp clerk.—A. I was to sell stamps and weigh packages, and I had to work four or five hours in the stamp department.

Q. What were your hours of work?—A. I went to work at 7 o'clock a. m. and quit at 7 o'clock p. m.

Q. Did you open the stamp office mornings?—A. I opened it, but not to go to work in there. I kept my oversleeves and apron in there, and I opened it to get them as I had other work in the post-office.

Q. Then you were in the habit of opening the stamp-office before Miss Laraway got there?—A. Yes; I opened it to get my things and locked it again.

Q. What other work did you do?—A. I was one of the stampers, and I assorted papers also.

Q. What hours of the day did you work in the stamp office?—A. From 9.30 to 10.30 a. m., and from 12.30 to 3 p. m., and from 6 to 7 o'clock p. m.

Q. Had you full charge of the stamp office from 6 to 7 p. m.?—A. Yes, Miss Laraway went home at 6 p. m.

Q. You closed up the stamp office for the day when you went home?—A. I closed it up at 7 p. m.

Q. What did you do to close?—A. I took out the little drawers and put them in the safe. What money was taken in from half past four to 7 p. m. I put in the safe. There were ten little drawers containing stamps.

Q. Did these ten drawers contain all the stamps subject to sale in your stamp office?—A. No, not all.

Q. Were the stamps given the stamp clerk on her last requisition all contained in these drawers, or was it the custom to have part of the requisition in the safe?—A. No, it was our custom to have part of the ones and twos in the safe.

Q. It was your custom and duty to lock the safe, the windows, and the door?—A. Yes, sir.

Q. Did you close the office the night preceding the burglary?—A. Yes, sir.

Q. Please state what you did?—A. I took the stamps and money and put them in the safe, closed the safe door and locked it, and I tried it to make sure I had locked it. Then I locked and bolted the windows—one of the windows we always kept locked—then I locked the door when I went out. The windows slide up and down. I pulled them down and there is a bolt and catch, an extra catch was on one, the one that was open. I fastened these catches.

Q. Which window is the extra catch on?—A. On one next to the door.

Q. Did you lock the door, and what did you do with the key?—A. I locked the door and put the key in my pocket.

Q. When did you next go to the office?—A. The next morning, about five minutes past 7 o'clock.

Q. Please tell what you did, and what you saw?—A. I opened the door; it was not locked. I first tried my key, and was surprised to find it unlocked; and I opened the door and went in. Things were strewn about the floor. I saw a large hammer; should think it weighed about four or five pounds; an iron brace, two or three steel punches. There were two drills; one was broken. There was a package of one-cent stamps, and the stamp-drawers were on the outside of the safe, on the window-sill. The door of the safe was closed; and I opened one door of the safe and I saw everything was out of it. I closed it again, got my sleeves and apron, and came out and locked the door.

Q. Did you notice anything else—candle grease?—A. I did not notice at that time the candle grease. Did afterwards on that day.

Q. How soon after did you notice the candle grease?—A. About 7.30 in the morning, when I came up again.

Q. Where was this candle grease?—A. It was on a sill or molding at the left of the stamp-window.

Q. Had there been candles used in the stamp-office by any of the employés?—A. No, sir.

Q. After you got your sleeves and apron where did you go?—A. I went in to the distributing department to work.

Q. Did you tell anybody?—A. No, sir. I said to some one there would be a noise at half past seven. I meant when Miss Laraway came she would make a noise about the robbery.

Q. When did you first tell anybody about the burglary?—A. I told no one until half past seven at the window.

Q. Did not give alarm to anybody?—A. No.

Q. Did you make any examination of the doors or windows?—A. I examined the window at about half past 7; saw where we had a nail in the top of the window, and you could see where they had pried it up. Could see the mark in the wood where they had pried it up. The window was down.

Q. Did you examine the door?—A. I did not examine the lock. I tried the key, and it would not work.

Q. When you went back who was there—at half past 7, I mean?—A. Miss Laraway was there, and a crowd outside of the door—some eight or ten persons, mostly employés of the office.

G. W. O'LEARY.

GEORGE L. BUTLER, called as a witness and examined by Mr. Lawler, and testified as follows:

Question. State your name, your age, and your place of business?—Answer. My name is George L. Butler; my age is nineteen years next August, and I reside at 813 East Twenty-first street, in this city.

Q. On the 8th day of July, 1886, you were in the employ of the Minneapolis post-office, were you not?—A. I was.

Q. In what capacity?—A. Mailing clerk.

Q. How long had you been so employed?—A. Two years and eight months.

Q. What were your duties?—A. Distributing mail.

Q. What were your hours of work?—A. My hours were from 9 o'clock p. m. until 6 a. m., with the privilege of going home when I got through with my work.

Q. Then 9 o'clock was your hour of commencing work?—A. That was my usual hour.

Q. How many hours did it take you usually to complete your work?—A. It generally took the full time; but this was in the summer and business was light.

Q. Well, in the summer months how many hours did it take you?—A. Seven or eight hours.

Q. Who employed you when you commenced work?—A. Mr. Laraway.

Q. Did he explain the nature of your work?—A. No, he told me I was to work in the mailing-room, and the superintendent of the mails would tell me what to do.

Q. Who was superintendent of the mailing department?—A. C. J. Bragdon.

Q. Did you get your instructions from Mr. Bragdon when you commenced work?—A. Yes, sir.

Q. Were your instructions about the number of hours in accordance with the custom which you have stated?—A. Yes; I was told to work from 9 p. m. until I got through, and not longer than 6 a. m.

Q. When did you get these instructions from Mr. Bragdon?—A. I think about the 1st day of July, 1886. I am quite sure that was the exact date.

Q. How long had you been doing this night work?—A. This was the commencement of my night work.

Q. What day did you commence work as night mailing clerk?—A. July 5 is the first night I worked. On July 1, 1886, I got my instructions to take effect the night of the 5th.

Q. Before July 1, 1886, what had you been doing?—A. I was employed as day mailing clerk?

Q. Who preceded you as night clerk?—A. I was the first all-night clerk; before that they had a man who worked until midnight.

Q. Where were you when Mr. Bragdon gave you these instructions?—A. In the mailing department.

Q. Please state all that Mr. Bragdon said to you when he gave you instructions.—A. We had a long talk about things in general. He told me to clean up all mail matter; he asked me to take the night work, and as no one else wanted it he told me he would give me the privilege of going home when I got through.

Q. Did he say anything to you about watching the post-office?—A. He did not say that specifically. I supposed that was a part of my duty, to look after the office the same as the man before.

Q. Were you to work every night in the week?—A. Yes; every night except Sunday night.

Q. Was there any person there Sunday night?—A. I don't know. It was not my duty to be there Sunday night.

Q. How many nights had you been on duty when the burglary occurred?—A. I went on duty the night of the 5th, and the robbery occurred on the night of the 8th.

Q. What time did you go on duty the night of the burglary?—A. Some time between 8 and 9 o'clock.

Q. When did you get through with your work that night?—A. I can't say; some time between 1.30 and 2 o'clock.

Q. Did you have much work that night?—A. It was one of the lightest nights I had.

Q. What time did you get through the night of the 7th of July, 1886?—A. I worked all night. That was the heaviest night of the season, or rather, I should say, of the week.

Q. What time did you leave the office the morning of the 8th of July?—A. I got through about 5.30 or 6 o'clock.

Q. Had any other employé arrived at the post-office before you left the morning of the 8th of July?—A. No.

Q. What door did you leave by the morning of the 8th of July?—A. The rear door, and I locked it after me.

Q. Do you remember what hour you left the morning of the 7th?—A. I don't remember.

Q. Did you get through earlier than the morning of the 8th?—A. I think I did.

Q. Had any other employé got to the office that morning before you left?—A. No.

Q. Can you remember what time you got through the morning of the 6th?—A. I can't say.

Q. This, you remember, was the first night you worked. Can you state how the length of time you worked compared with the other night?—A. It was holiday night, and not much mailing matter as usual, and I must have got through unusually early.

Q. Had any other employé arrived that morning before you left?—A. I think not.

Q. Did you have any instruction from Mr. Bragdon or anybody else to remain at the post-office mornings until some one of the employés arrived?—A. I did not.

Q. Your understanding then was that you could leave the office when your work was finished?—A. Yes.

Q. Do you know who were the first of the day force to arrive mornings?—A. Mr. Pierce was the first to arrive in my department. There might be mail-carriers who arrived early. After the robbery a mail-carrier got there at 5 o'clock. Mr. Pierce arrived at 6 o'clock usually.

Q. The morning of the 9th, when you left the post-office, was there any one in the post-office proper?—A. Not to my knowledge.

Q. Was there anybody there the morning of the 8th when you left there?—A. No.

Q. Was there anybody there the morning of the 7th when you left there?—A. No.

Q. Was there anybody there the morning of the 6th when you left there?—A. No.

Q. (Map or diagram marked Ex. "A" shown witness.) Describe on the diagram the part of the post-office in which you did most of your work?—A. This large space back in the rear of the northerly side shows the whole mailing department. The paper table is where I did most of my work. Once or twice in the night I had to go to the drop-boxes by going through the back way in rear into the carriers' departments to get to the drop-boxes. Mr. Brown usually brought all the papers back to the table. I went up to the drop-boxes to clean up what was dropped late in the evening, after nine o'clock. I don't know as I went to boxes after mail more than once after midnight.

Q. Did the nature of your work take you into the lobby at all?—A. No.

Q. Please describe these rear windows in the mailing department?—A. I should say they were between eight or nine feet high, and about five feet wide—they are large windows.

Q. Describe these double doors in the rear of the mailing department opening on the alley?—A. They were partly wood and partly glass.

Q. At the time of the burglary was there glass in both doors?—A. Yes; I think so.

Q. Do you know whether or not the glass was absent from these doors and space boarded up?—A. I can't say as to that.

Q. How were the rear windows fastened?—A. By one of those patent catches.

Q. Did you hear anything about one of these windows having been found opened by the police patrol a few nights before the burglary, one night after you had locked up and gone home?—A. Yes. Those windows I used as a ventilator, and I left one partially open—I forgot to shut it down; it was one of the nights while I was on duty, and after that I took special care to lock them securely.

Q. State the character of the night of the burglary, as to the weather?—A. Well, it thundered and lightened continually, and a pouring rain, one of the wildest nights of the summer, making it impossible for me to hear any noise unless the noise was great. A very dark night—could not see your hand before your face. The storm commenced early in the evening, or day before. It was storming when I commenced work, and was at its height when I went home.

Q. What time at night did the other employés leave after you commenced work?—A. Can't say. Some would leave early and others later. Usually the last left about 9 o'clock. Mr. Brown left about 9 o'clock.

GEORGE L. BUTLER.

CLARENCE J. BRAGDON, a witness being called and duly sworn, testified as follows:

Question. What is your full name, your place of residence, and your age?—Answer. My name is Clarence J. Bragdon; my place of residence is Minneapolis, Hennepin County, Minnesota, and my age is thirty-two years.

Q. On July 8, 1886, you were connected with the Minneapolis post-office, were you not?—A. Yes, sir.

Q. How long had you been connected with the post-office?—Twelve years and nine months.

Q. What position did you hold and how long had you held it?—A. Superintendent of out-going mails. I had held this office three years and nine months.

Q. Please describe the duties required of you.—A. My duties was to have full charge of out-going mails, and had full charge of all men under me.

Q. The night mail clerk was in your charge?—A. Yes, sir; he was taken from the day force to work nights to look after the office.

Q. Who was night mail clerk at that time?—A. George L. Butler.

Q. What were his hours?—A. He came on about 6 o'clock in the evening at that time and remained until daylight, about 4 o'clock next morning.

Q. Were his hours of any certain or fixed time?—A. They were when he first came on.

Q. What were those hours?—A. As I have stated, from 6 o'clock until Pierce got there, about 4 or half past 4 in the morning.

Q. At the time of the burglary were his hours definite and fixed?—A. A few weeks previous to the time stated he came to me and said he got through his work two nights in the week before 4.30 a. m. They would be about the same nights.

Q. Did he state what nights they were?—A. He might have stated what nights; I don't remember now, but I think he did.

Q. Was the night of the burglary one of the nights?—A. Yes; I think it was one of the nights when the work was light. The weekly papers did not come on that night, and it must have been one of the nights when work was light.

Q. Did you communicate to Mr. Laraway the fact that you had granted this permission to Butler to go home when he got his work done?—A. No, sir; I did not.

Q. Did you give Butler any instructions at any time about watching the post-office?—A. Yes, I did give him instructions to keep a lookout generally for the office and not allow any of his friends in the mailing department. I never instructed him to go out around the lobby.

Q. Was there any man whose business it was to sleep in the office?—A. Mr. Laraway had had a man to watch there and slept in the old office, so when he got through his work he could lay down there. But there was no place for a cot or bed there. We were a long time getting the office in shape, and on the 8th day of July, 1886, things were not in shape and we were working at great disadvantage.

Q. Were you acquainted with C. P. Cole, of the merchants' police?—A. I knew him by sight; when I was there nights, looking after work and repairs, I would see him on duty, and would see him there on stormy nights; have spoken to him nights. I have seen him there at 12 o'clock and at 3.30 o'clock nights.

Q. Did you give Cole any instructions?—A. I did not. I did not think I had any right to give him orders, because he was in the employ of Mr. Stillman, the owner of the building, and had full instructions from him.

Q. Did you know the extent of Cole's beat?—A. I did not.

Q. What was the custom of keeping lights burning in the office?—A. We always keep one burning full blast in the mailing department, and there was one burning near the boxes in front, and this shed light so the lobby was quite light.

Q. Was there a light kept burning through the night in the stamp department?—A. I don't know.

Q. Was the light which was kept burning near the boxes, behind the boxes, or in the lobby?—A. It was behind the boxes, not in the lobby.

Q. Had you ever given instructions about burning lights through the night?—A. I had not, only in the mailing department. It was a rule of the office to keep lights burning all night in the different departments.

State what you know about a policeman in front of the office?—A. The office was on a regular patrol beat of the city, and a policeman was supposed to be on duty there all night. I have been out in front of the office on several occasions at midnight and I never saw a policeman.

Q. (Diagram shown witness.) Please describe the partition between the box department and the box department lobby?—A. The two sides, the front and side, were composed of the regulation lock-boxes furnished by the department. About 6 feet to the top of the boxes. Above, the boxes reaching to the ceiling were composed of small lights of glass set in hard wood frame.

Q. Describe the partition between the box department lobby and the money order lobby?—A. This was composed partly of hard wood about 8 feet high, in which lights of glass are set reaching to the ceiling, with a hard wood door, which was closed every night at 6 o'clock.

Q. Was this glass transparent?—A. It was above the door; below the door it was frosted.

Q. Describe the partition between the money order lobby and the mailing department?—A. It was about the same as the other partition except only it extended up about 8 feet and did not reach to the ceiling.

Q. Describe the partitions shown on this diagram between the several departments; I mean the mailing room, and postmaster's room, and deputy-postmaster's room, register's department, money order and box department?—A. These partitions were about 8 feet high, composed partly of glass and partly of wood. No frosting on glass.

Q. Is there anything else that you desire to state?—A. Yes; in regard to their getting away with the stamps; they could easily have done this even if there had been a man in the mailing room working at the mailing table. As the table was some distance from the alley, and the alley being full of old buildings which they could easily pass around unobserved and get the horse from the stable and then hitch him to the wagon and pass out on to Fifth street, which they did do.

Q. Could a man working at the mailing table see through into the box department lobby?—A. No.

Q. Do you know anything about the glass being absent from one of the rear doors of the mailing department?—A. I don't. I think there was one light out after the robbery. Men were careless throwing mail-bags from the wagons.

C. J. BRAGDON.

I, R. R. Odell, United States circuit court commissioner for the district of Minnesota do hereby certify that the foregoing forty-one sheets is the testimony of the witnesses produced, sworn, and examined before me touching the above-named claim, at the city of Minneapolis, Minn., on the 16th, 17th, 18th, 20th, and 21st days of December, A. D. 1886. That each of said witnesses was, before testifying, by me duly sworn to truly answer such questions as should be put to him concerning said matter, and to testify to the truth, the whole truth, and nothing but the truth concerning the same. And that the testimony of each of the said witnesses was by me read over to him and her, and the same subscribed by him and her in my presence. And the annexed map, marked Exhibit A, was by me received in evidence admitted by witnesses to be correct.

In witness whereof I have hereunto set my hand and affixed my seal of office this 23d day of December, A. D. 1886.

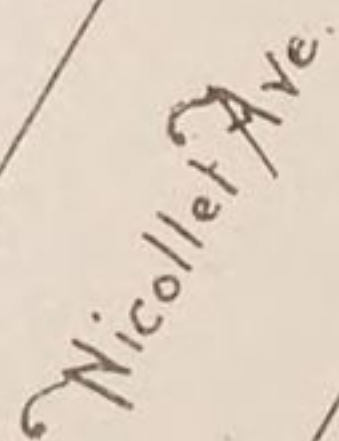
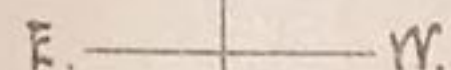
[SEAL.]

R. R. ODELL,
United States Commissioner, District Minnesota.

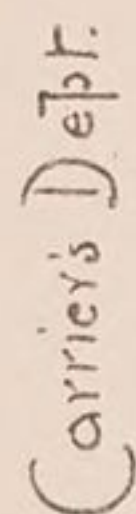
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Ex "a"

U.S. Commissioner
Dist. Prison -



Plat Showing
Location of P.O.
Minneapolis



Mailing Dept.

Floor Plan of P.O. Scale $\frac{1}{8}'' = 1 \text{ ft.}$

INDIAN DEPREDAATION CLAIMS.

LETTER

FROM

THE ACTING SECRETARY OF THE INTERIOR,

TRANSMITTING,

With a letter from the Commissioner of Indian Affairs, a schedule of Indian depredation claims examined prior to January 1, 1887, with the determination of the Departments thereon.

JANUARY 8, 1887.—Referred to the Committee on Indian Affairs and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
Washington, January 5, 1887.

SIR: In compliance with requirement contained in act of May 15, 1886 (Stats. of 1885-'86, page 44), making appropriations for the Indian service for the year ending June 30, 1887, I have the honor to transmit herewith a schedule of Indian depredation claims, numbering 305, whose examination had been completed on January 1, 1887, together with the papers in each of the claims and the determination of the Department on the respective cases.

The letter of the Commissioner of Indian Affairs, dated 5th instant, to this Department, on this subject, is also inclosed.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., January 5, 1887.

SIR: In compliance with the provisions of an act entitled "An act making appropriations for the current and contingent expenses of the Indian Department, and for fulfilling treaty stipulations with various Indian tribes, for the year ending June 30, 1887, and for other purposes" (United States Statutes of 1886, pamphlet copy, page 44), I have the honor to transmit herewith a list of depredation claims in favor of citi-

zens and against Indians holding treaty relations with the United States, whose examinations in pursuance of said act were completed by the 1st instant. Said list gives the numbers of the claims, name and post-office address of each claimant, character of the property stolen or destroyed, Indians charged with the depredation, when committed, when filed, amount claimed, amount allowed, date of action, and the "date and clause of the treaty creating the obligation for payment," and also what funds, now existing "by reason of treaty or other obligation, out of which the same should be paid."

Each claim herewith is accompanied by the record of the original testimony, former action had, post-office address of the witnesses, together with a letter embodying my "opinions and conclusions upon all material facts, and all the evidence and papers pertaining thereto."

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

INDIAN DEPREDATION CLAIMS.

A list of depredation claims in favor of citizens of the United States against Indians in of May 3, 1885, as amended

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
602	Abbingdon, Lafayette, Morris County, Kansas.	Clothing, groceries, &c.	Cheyenne.....	June 3, '68	Aug. 18, '68
2064	Abieta, Juan, Socorro County, New Mexico.	Goats.....	Mescalero-Apache	Nov., 1852	Dec. 20, '54
704	Abney and Bender, Cheyenne, Wyo.	Oxen, horses, and merchandise.	Sioux.....	Nov. 2 and 5, 1867.	June 30, '69
2066	Abren, Francisco P., Socorro County, New Mexico.	Horses, mules, oxen, cow.	Apache.....	Nov., 1853	June, 1854
1295	Anderson, George, Osage County, Kansas.	Timber.....	Sac and Fox.....	1870, 1872	Feb. 4, '74
1228	Anderson, Hugh, Indian Territory.	Money.....	Ta-wa-ca-mies....	June 27, '70	May 24, '73
2076	Apodaco, Raphael, Bernalillo County, New Mexico.	Horses and mules.	Navajo.....	Aug., 1851	Oct., 1853
196	Armijo, Salvador, Albuquerque, N. Mex.	Wagons, mules, &c.	Cheyenne.....	Sept. 10, '67	May 23, '70
765	Ashmore, Sarah L. (once Muller), Allan County, Kansas.	Horses.....	Osage.....	Apr., 1862	May 29, '69
461	Autobeas, Charles, Huerfano, County, Colorado.	do.....	Comanche, Cheyenne, and Arapaho.	1861-1864	Apr. 16, '67
700	Baca, Simon, Las Vegas, N. Mex.	Oxen, wagons, &c.	Kiowa.....	July, 1867	June 9, '69
2102	Baca, Jose Morcellino, Pueblo, Colo.	Corn, farming utensils.	Ute.....	Jan. 19, '55	Feb. 24, '55
2101	Baca, Jose Morcellino, Pueblo, N. Mex.	Oxen, cows, and horses.	Utah.....	Dec. 25, '54	Jan. 13, '55
2107	Baca, F. T. Cabeza de, Santa Ana County, New Mexico.	Goats and sheep..	Navajo.....	Mar., '52, '53	Dec. 20, '54
700½	Baca, Romaldo, Las Vegas, N. Mex.	Oxen and wagons..	Kiowa.....	July 16, '67	June 9, '69
916	Baca, Thos. C. de, Pena Blanco, N. Mex.	Sheep and burros..	Navajo.....	Feb. 10, '71	June 15, '71
924	Baca, Thos. C. de, Santa Ana County, New Mexico.	Horses and mules..	do.....	Apr. 29, '71	do.....
700½	Baca, Jose Albino, San Miguel County, New Mexico..	Oxen.....	Kiowa.....	July 18, '67	June 9, '69
699	Baca, Juan Maria, Las Vegas, N. Mex.	Wagons, cattle, &c.	Kiowa.....	July 18, '67	June 9, '69
353	Baca, Antonio Baca y Las Vegas, N. Mex.	Mules and horses..	Navajo.....	Oct. 5, '62	Feb. 24, '66
2096	Baca, Pedro Socorro county, New Mexico.	Oxen.....	Apache.....	Feb. 18, '53	Dec. 20, '54
925	Baca, Simon y, Las Vegas, N. Mex.	Horses, mules, and sheep.	Kiowa.....	May 3, '71	June 20, '71
1242*	Baird, Lieut. Geo. M., United States Army.	Money.....	Cheyenne.....	Sept. 14, '67	July 25, '73
645	Baker, Wm. H., Wright County, Missouri.	Horse.....	Osage.....	May 18, '66	Dec. 11, '68
532	Barber, H. C., Lyon County, Kansas.	Steer.....	Kaw.....	May 28, '67	Dec. 4, '67
767	Barber, Thomas, Labette County, Kansas.	Horses and steers..	Osage.....	Apr., 1867	May 29, '69
749	Barlow, Sanderson & Co., Denver, Col.	Mules and horses..	Cheyenne.....	1867	Jan. 20, '70
421	Barrett, Richard F., Johnson County, Nebraska.	Oxen, wagon, sheets, &c.	Kiowa and Arapahoe.	July 18, '64	Nov. 30, '66

* Barred, act of June 30, 1834, sec. 17, 4 Stats., 729.

treaty with the Government, which have been investigated pursuant to the provisions of the act by act of May 15, 1886.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$243 35	\$200 00	-----	1886. Nov. 26	Art. 1, treaty of May, 1868, 15 Stats., 655.	11 installments of \$12,000 each \$132,000, as per 6th art. of treaty May 10, 1868, 15 Stats., 657.
104 00	-----	\$104 00	Nov. 24	Treaty of July 1, 1852, 10 Stats., 979.	
3,093 50	950 00	-----	Nov. 26	Art. 1 and 2 of treaty Oct. 28, 1865, 14 Stats., 747.	12 installments of \$130,000 each, \$1,560,000, as per treaty, 15 Stats., 628, sec. 10.
210 00	-----	210 00	Nov. 24	Treaty of July, 1852, 10 Stats., 979.	
1,000 00	-----	1,000 00	Oct. 16	Treaty of Feb. 18, 1867, 15 Stats., 495.	
1,130 00	-----	1,130 00	Sept. 14	Treaty of May, 1846, Revised Treaties, p. 306.	
800 00	-----	800 00	Oct. 20	Treaty of Sept. 9, 1849, 9 Stats., 974.	
15,525 00	4,745 00	-----	Nov. 27	Art. 1, of treaty Oct. 14, 1865, 14 Stats., 703	Joint interest in 10 installments of \$20,000 each, \$200,000, 10th art. of treaty, 15 Stats., 596.
400 00	-----	400 00	Nov. 24	Treaty of Nov. 10, 1808, 7 Stat., 107.	-----
3,390 00	2,080 00	-----	Dec. 3	Art. 8, of treaty July 27, 1853, 10 Stats., 1013; Art. 2, of treaty Feb. 18, 1861, 12 Stats., 1163.	Comanche interest in 11 installments of \$30,000 each, \$330,000, 10th art. of treaty, 15 Stats., 584; Cheyenne and Arapaho interest in 10 installments of \$20,000 each, \$200,000, as per treaty, 15 Stats., 596.
5,647 50	2,000 00	-----	Oct. 19	Art. 2, treaty of Oct. 18, 1865, 14 Stats., 717.	Interest in 11 installments of \$30,000 each, \$330,000, as per treaty, 15 Stats., 584, sec. 10.
1,053 50	-----	1,053 50	Oct. 19	Treaty of Dec. 30, 1849, 9 Stats., 984.	
3,925 00	-----	3,925 00	Oct. 21	do -----	
2,695 00	1,230 00	-----	Dec. 2	Art. 2 and 3, treaty of Sept. 9, 1849, 9 Stats., 974.	No treaty funds.
13,490 00	4,000 00	-----	Sept. 24	Art. 2, treaty of Oct. 18, 1865, 14 Stats., 717.	See claim above, No. 700.
512 00	312 50	-----	Sept. 9	Art. 1, treaty of June 1, 1868, 15 Stats., 667.	No treaty funds.
1,325 00	240 00	-----	Sept. 8	do -----	Do.
8,637 50	1,750 00	-----	Sept. 25	Art. 1, treaty of Oct. 21, 1867, 15 Stats., 581	See claim above, No. 700.
8,147 50	2,575 00	-----	Dec. 4	Art. 2, treaty of Oct. 18, 1865, 14 Stats., 717.	Do.
10,000 00	-----	10,000 00	Nov. 24	Treaty of Sept. 9, 1849, 9 Stats., 974.	
180 00	-----	180 00	Nov. 23	Treaty of July 1, 1852, 10 Stats., 979.	
4,010 00	1,656 25	-----	Sept. 27	Art. 1, treaty of Oct., 21, 1867, 15 Stats., 581	Do.
1,337 05	960 70	-----	Sept. 17	Art. 3, 3d clause, treaty of Oct. 14, 1865, 14 Stats., 704.	
70 00	50 00	-----	Nov. 24	Art. 10, treaty of Sept. 29, 1865, 14 Stats., 687.	\$369,120 as per Senate Resolution, Jan. 2, 1825, 7 Stats., 242, and treaty, September 29, 1865, 14 Stats., 687.
30 00	-----	30 00	Oct. 16	Treaty of Oct., 1859, 12 Stats., 1111.	
3,400 00	-----	3,400 00	Nov. 24	Treaty of Sept. 29, 1865, 14 Stats., 687.	
10,750 00	7,740 00	-----	Dec. 6	Art. 2, treaty of Oct. 1865, 14 Stats., 703.	See claim above, No. 196.
2,942 50	1,558 50	-----	Nov. 23	Art. 4, treaty of July 27, 1853, 10 Stats., 1013; Art. 1, treaty of Oct. 14, 1865, 14 Stats., 703.	Kiowa interest in 11 instalments, \$30,000, \$330,000, as per treaty, 15 Stats., 584; Arapahoe interest in 10 instalments, \$20,000, \$200,000, as per treaty, 15 Stats., 596.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
768	Baum, Charles M. and William J., Vermillion County, Illinois.	Cattle	Osage.....	Sept. 1866	July 3, '69
1288	Beale, Thomas W., Dallas County, Oregon.	Horses.....	De Chute.....	Nov. 10, '55	Dec. 27, '73
2117	Bean, J. H., Douglas County, Oregon.	Dwelling, stables, &c.	Umpqua	July 25, '56	Dec. 1857
590	Bellmard, M., Morris County, Kansas.	Household goods, &c.	Cheyenne.....	June 3, '68	Aug. 21, '68
874	Benning, Albro, T., Miami County, Kansas.	Revolvers, &c.	Osage.....	July 1, '69	Jan. 25, '71
191	Bickford and Stanley, residence unknown.	Horses and mules.	Kiowa	Feb. 9, July 20, '64	Mar. 22, '65
191½	Bickford and Stanley, Leavenworth, Kans.	Mules, &c.....	Cheyenne.....	May 17, '64	do
1	Bissonette, Joseph, Shannon County, Dakota.	Mules, horses, &c.	do.....	Feb. 10, '67	Oct. 31, '67
615	Billings, Levi, Marion County, Kansas.	Horses.....	Kaw	Sept. 18, '65	Sept. 5, '68
976*	Bissonette, Joseph, sr., Saint Louis, Mo.	Groceries, &c....	Minneconjou Sioux	Mar. 20, '55	Dec. 16, '71
519	Bishop, William, Lincoln County, Nebraska.	Stock, houses, &c.	Sioux	Aug. 18, '64	Nov. 2, '67
975	Bissonette, Joseph, sr., Saint Louis, Mo.	Oxen, mules, &c....	Sioux and Crows..	Aug. 5, '54	Dec. 16, '71
899	Blinn, Richard F., Wood County, Ohio.	Money, clothing, &c.	Cheyenne.....	Oct. 9, '68	Feb. 23, '71
1245	Box, George, Laramie County, Wyoming.	Mules	Minneconjou Sioux.	Sept. 9, '72	July 28, '73
1225	Box, William, Yankton County, Dakota Territory.	do	Brulé Sioux	June 15, '67	May 19, '73
422	Brown, Jesse, Nemaha County, Nebraska.	Clothing.....	Kiowa and Arapaho.	July 18, '64	Nov., 1866
2118	Bragg, William, Douglas County, Oregon.	One ox	Cow Creek, or Umpqua.	Mar. 1, '56	Dec., 1857
427	Brockman, James, Nemaha County, Nebraska.	Household goods.	Kiowa and Arapaho.	July 18, '64	Nov., 1866
1148	Brooking, James, Del Norte County, California.	House, furniture, &c.	Oregon	Feb. 23, '56	Jan. 14, '73
1154	Brown, Charles, Del Norte County, California.	do	Rogue River.....	Feb., '56	do
972	Burdsal, Caleb S., Denver, Colo.	Pony	Ute.....	July 13, '71	Nov. 27, '71
3284*	Burns, Fielding, Platte City, Mo.	Cattle	Comanche	June and Sept., '65.	July 1, '84
1222	Burke, Raymond, Ford County, Kansas.	Cattle	Osage.....	Jan., 1872	May 15, '72
151	Burr, John H., Reno County, Kansas.	Ponies, mules, oxen, &c.	Kaw.....	Dec., 1858	Mar. 14, '64
705	Bush, William H., Denver, Colo.	Machines and hay	Cheyenne.....	Aug. 21, '68	July 3, '69
484	Bush, Rock, Fort Collins, Col.	Horses.....	Sioux.....	June 20, '65	July 13, '66
1257*	Baker and Gilbert, Saline County, Nebraska.	Horses, cows, corn, &c.	Cheyenne and Ogalalla Sioux.	June 9, '67	Oct. 9, '73
2113	Bell, William N., King County, Washington Territory.	House, furniture, &c.	Puyallup and Klickitat.	Jan. 1, '56	1856
1758	Breckenridge, Mrs. E. A., Laramie County, Wyoming.	Horses, money, &c.	Sioux, Cheyenne, Arapaho.	1866 '67 '68	June 26, '78

* Barred, act of June 30, 1834, sec. 17, 4 Stats., 729.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$1,800 00	\$900 00	.....	1886. Oct. 18	Treaty of Nov. 10, 1808, Art. 2, 243, 9-109, 7 Stats. —.	See claim above, No. 645.
265 00	.....	\$265 00	Sept. 6	Revision of Treaties, p. 622.	
1,034 00	450 00	.....	Sept. 22	Art. 6, treaty of Sept. 19, 1853, 10 Stats. 1028.	No treaty funds.
1,293 00	678 00	.....	Dec. 8	Art. 2, treaty of Oct. 14, 1865, 14 Stats., 703.	See claim above, No. 196.
50 50	.....	50 50	Sept. 9	Treaty of Oct. 29, 1865, 14 Stats., 689.	
1,400 00	1,000 00	.....	Nov. 26	Art. 8, treaty of July 27, 1853, 10 Stats., 1013.	See claim above, No. 700.
866 45	600 00	.....	Nov. 23	Art. 2, treaty of Feb. 18, 1861, 12 Stats., 1164.	See claim above, No. 196.
1,350 00	925 00	.....	Dec. 7	Art. 2, treaty of Oct. 14, 1865, 14 Stats., 703.	See claim above, No. 196.
300 00	.....	300 00	Nov. 24	Treaty of Oct. 5, 1859, 12 Stats., 1111.	
1,990 75	1,057 95	.....	Dec. 7	Art. 4, revised treaties, p. 1048.	
3,750 00	.....	3,750 00	Oct. 16	Treaty of July 5, 1825, 7 Stats., 252; treaty of June 30, 1834, 4 Stats. 731.	
2,545 25	.....	2,545 25	Dec. 7	Treaty of Aug. 4, 1825, 7 Stats., 266; Revised Treaties, p. 1047.	
2,400 00	1,200 00	.....	Oct. 18	Art. 1, treaty of Oct. 28, '67, 15 Stats., 593.	See claim of S. Armijo, No. 196.
800 00	500 00	.....	Dec. 1	Art. 1, treaty of Apr. 29, 1868, 15 Stats., 635.	Interest in 12 installments, \$130,000, equal \$1,560,000, as per treaty, 15 Stats., sec. 10.
450 00	.....	450 00	Dec. 1	Treaty of Oct. 14, 1805, 14 Stats., 699.	
48 25	.....	48 25	Oct. 20	Treaty of July 27, 1853, 10 Stats., 1013; treaty of Feb. 18, 1861, 12 Stats., 1163.	
75 00	.....	75 00	Sept. 17	Treaty of Sept. 19, 1853, 10 Stats., 1028.	
43 75	.....	43 75	Nov. 27	Treaty of July 27, 1853, 10 Stats., 1013; treaty of Feb. 18, 1861, 12 Stats., 1163.	
1,013 75	.....	1,013 75	Sept. 1	Treaty of June 25, 1855, 12 Stats., 966.	
720 87	.....	720 87	Sept. 22	Treaty of Sept. 10, 1853, 10 Stats., 1019.	
125 00	60 00	.....	Dec. 2	Art. 6 and 7, treaty of Mar. 2, 1868, 15 Stats., 619.	Interest in 11 installments, \$30,000, equal \$330,000, as per treaty, 15 Stats., sec. 11.
5,775 00	4,620 00	.....	Sept. 25	Art. 4, treaty of July 27, 1853, 10 Stats., 1013.	
5,385 00	.....	5,385 00	Sept. 7	Treaty of Nov. 10, 1808, 7 Stats., 108.	
2,647 36	.....	2,647 36	Nov. 24	Treaty of Aug. 16, 1822, 7 Stats., 270.	
7,600 00	375 00	.....	Nov. 27	Art. 1 and 11, treaty of Oct. 28, 1867, 15 Stats., 593.	See claim above, S. Armijo, No. 196.
1,050 00	700 00	.....	Nov. 23	Art. 1 and 5, treaty of July 5, 1825, 7 Stats., 252.	See claim above, George Box, No. 1245.
3,060 00	722 00	.....	Dec. 21	Art. 2, treaty of Oct. 14, 1865, 14 Stats., 703; art. 1, treaty of Oct. 28, 1865, 14 Stats., 747.	
1,568 00	745 00	.....	Dec. 23	Art. 8, treaty of Dec. 26, 1854, 10 Stats., 1132.	No treaty funds.
6,339 00	.....	6,339 00	Dec. 22	Treaty of Oct. 14, 1865, 14 Stats., 703.	

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
1361	Cadwell, John W., Bell County, Texas.	Horses, cattle, &c.	Kiowa and Comanche.	1856'65'66'67	May 19, '74
656	Call, James, Anderson County, Kansas.	Cattle, &c.	Osage.	July 26, '68	Jan. 28, '69
619	Calahau, Thomas, Todd County, Minnesota.	Corn, potatoes, &c.	Chippewa.	Aug., 1867	Sept. 15, '68
1260	Campbell, Sarah A., Gallatin County, Montana.	Horses.	Sioux.	July 24, '71	Nov. 3, '73
502	Campbell, Hugh, Ellis County, Kansas.	Mules, wagons, &c.	Cheyenne.	Sept. 9, '67	May 4, '68
1292	Carahoof and Stone, Burleigh County, Dakota.	Lodge, blankets, &c.	Arickaree.	June 6, '73	Jan. 22, '74
1294	Case, Cyrus, Osage County, Kansas.	Timber.	Sac and Fox.	1870 to 1872	Feb. 4, '74
1400*	Casados, Jesus, San Miguel County, New Mexico.	Sheep, ewes.	Navajo.	Aug. 10, '62	Aug. 20, '74
801 }	Chaves and Labadi, San Miguel County, New Mexico.	Sheep.	do.	Mar. 27, '62	July 26, '70
802 }					
759	Chism, John, Lincoln County, Nebraska.	Cattle.	Comanche.	June 12, '68	Feb. 19, '70
1665	Chism, John S., Lincoln County, New Mexico.	Horses and mules.	Mescalero Apache.	Apr., June, Sept., '73	Aug. 4, '76
1377	Chism, John S., Lincoln County, New Mexico.	Mules, horses, cattle.	do.	Aug., '73	July 27, '74
1658	Chism, John S., Lincoln County, New Mexico.	Horses.	Comanche.	July 15, '74	Aug. 14, '76
1281	Clark, W. H., Buchanan County, Texas.	Horses, mules.	do.	1871-1872	Dec. 10, '72
766	Clark, Matthew, Collins County, Texas.	Steers.	Great and Little Osage.	Oct. '13, '68	July 3, '69
497	Claymore, Benjamin, Larame County, Colorado.	Potatoes, wagon sheets, &c.	Ogalalla Sioux.	Sept. 20, '65	Feb., 1867
764	Clemens, Bazille, Cheyenne River Agency, Dakota.	Mules, ponies, &c.	Sioux.	June, 1869	Mar. 30, '70
1215	Connell, James G., Burnett County, Texas.	Horses.	Osage.	June, 1871	Apr. 12, '73
782	Connolly, J. J., Decatur, Tex.	do.	Kiowa and Comanche.	Aug. 23, '69	Apr. 9, '70
871	Cordova, Enriquez, Rio Arriba County, New Mexico.	do.	Navajo.	July 7, '69	Jan. 24, '71
428	Cornelius, James K., Richardson County, Nebraska.	Ox, guns, &c.	Kiowa and Arapaho.	July 18, '64	Nov. 30, '66
630	Costello, J. H., Marion County, Kansas.	Hay, corn, &c.	Cheyenne and Arapaho.	1863	Nov. 2, '68
420	Cowen, P. V., Nemaha County, Nebraska.	Clothing, &c.	Kiowa and Arapaho.	July 18, '64	Nov., 1866
3389½	Cowley, Nancy, Butler County, Kansas.	Horses, &c.	Caddo.	Feb. 15, '64	Mar. 14, '74
582	Craguer, Julius, Ellis County, Kansas.	Mules, harness, &c.	Cheyenne.	June, Sept., 1867.	May 25, '68
453	Crane, Jesse H., Fort Larned, Kansas.	Mules and horses.	Cheyenne.	May 13, June 5, '64.	May 29, '67
654	Creamer, William A., Marion County, Kansas.	One mare.	Kaw.	July 25, '67	Jan. 12, '69
420	Crowe, Jerome E., Nemaha County, Nebraska.	Clothing, &c.	Kiowa and Arapaho.	July 18, '64	Nov. 30, '66
605½	Crowe, William, Morris County, Kansas.	2 stone dwellings.	Cheyenne.	June 3, '68	Aug. 28, '68
769	Curtis, Theron D., Lawrence, Kans.	Mule and pony.	Osage.	Oct. 1, '67	July 3, '69
1757	Curry, Adolph, Albany County, Wyoming.	Horses, mules, cattle.	Sioux.	1870, '71, '72, '73.	June 26, '78
1289	Cook, Franklin, administrator of John Cook, Becker County, Minnesota.	House, clothing, goods, &c.	Pillager band of Chippewa.	Apr. 26, '72	Dec. 30, '73

* Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved,	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$14,245 00	.....	\$14,245 00	1886. Oct. 16	Treaty of July 27, 1853, 10 Stats., 1013; treaty of Oct. 18, 1865, 14 Stats., 717.	
2,410 00	.....	2,410 00	Sept. 25	Treaty of Sept. 29, 1865, 14 Stats., 687.	
191 45	.....	191 45	Nov. 23	Treaty of Oct. 2, 1863, 13 Stats., 667.	
715 00	.....	715 00	Sept. 6	Treaty Apr. 29, 1868, 15 Stats., 635.	
635 50	\$336 00	.....	Oct. 21	Art. 2, Oct. 14, 1865, 14 Stats., 703.	See claim, S. Armijo, No. 196.
291 00	.....	291 00	Oct. 19	Treaty Indian laws, page 323.	
1,000 00	.....	1,000 00	Nov. 23	Treaty March 6, 1861, 12 Stats., 1171.	
3,000 00	1,875 00	.....	Dec. 4	Art. 3, treaty Sept. 9, 1849, 9 Stats., 974.	
30,960 00	.....	30,960 00	Dec. 13	Treaty Sept. 9, 1849, 9 Stats., 974.	
37,950 00	.....	37,950 00	Oct. 21	Treaty Oct. 21, 1867, 15 Stats., 581.	
39,310 00	.....	39,310 00	Oct. 21	do.....	
20,260 00	.....	20,260 00	Oct. 21	.....	
27,500 00	.....	27,500 00	Oct. 21	.....	
820 00	.....	820 00	Sept. 16	Treaty Oct. 21, 1867, 15 Stats., 581.	
770 00	550 00	.....	Oct. 21	Art. 10, treaty Sept. 29, 1865, 14 Stats., 689.	See claim, W. H. Baker, No. 645.
1,090 00	450 00	.....	Nov. 27	Art. 4, treaty Sept. 17, 1851, Indian laws, 317.	Interest in 12 installments, \$130,000 each, \$1,560,000, as per treaty, 15 Stats., 638, Sec. 10.
4,650 00	1,740 00	.....	Dec. 17	Art. 1, treaty April 29, 1868, 15 Stats., 635.	See above claim, No. 497.
7,775 00	.....	7,775 00	Dec. 7	Treaty Sept. 29, 1865, 14 Stats., 687.	
250 00	125 00	.....	Aug. 18	Arts. 1, 11, treaty Oct. 21, 1867, 15 Stats., 581.	Interest in 11 installments, \$30,000 each, \$330,000, as per treaty, 15 Stats., 584, Sec. 10.
375 00	.....	375 00	Oct. 16	Treaty June 1, 1868, 15 Stats., 667.	
210 50	.....	210 50	Nov. 24	Treaty July 27, 1853, 10 Stats., 1013; treaty Oct. 14, 1865, 14 Stats., 703.	
553 25	.....	553 25	Sept. 9	Treaty Oct. 28, 1867, 15 Stats., 593.	
46 00	.....	46 00	Oct. 19	Treaty Feb. 18, 1861, 12 Stats., 1163; treaty July 27, 1853, 10 Stats., 1013.	
1,158 00	.....	1,158 00	Sept. 13	Treaty Mar. 8, 1847, revised Indian treaty, 306.	
739 00	350 00	.....	Oct. 20	Art. 2, treaty Oct. 14, 1865, 14 Stats., 704.	See claim S. Armijo, No. 196.
1,420 00	.....	1,420 00	Sept. 29	Treaty of July 6, 1825, 7 Stats., 256.	
100 00	.....	100 00	Nov. 24	Treaty of Oct. 5, 1859, 12 Stats., 1111.	
1,584 00	984 15	.....	Nov. 24	Art. 4, treaty of July 27, 1853, 10 Stats., 1013; art. 1, treaty of Oct. 14, 1865, 14 Stats., 703.	See claim above, R. F. Barrett, No. 421.
600 00	.....	600 00	Nov. 27	Treaty of Oct. 28, 1867, 15 Stats., 593.	
225 00	.....	225 00	Nov. 24	Treaty of Sept. 29, 1867, 14 Stats., 687.	
6,050 00	.....	6,050 00	Dec. 18	Treaty of Oct. 28, 1865, 14 Stats., 747.	
2,104 85	1,800 00	.....	Dec. 29	Arts. 7 and 9, treaty of Feb. 22, 1855, 10 Stats., 1165.	Interest in 7 installments of \$22,666.66 each, equal \$158,666.62, as per treaty, 10 Stats., 1168, sec. 3; 13 Stats., 694, sec. 3.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
888	Dahl, Martin, Jewell County, Kansas.	Clothing, provisions, &c.	Cheyenne.....	May 23, '69	Mar. 1, '71
813	Dailey, Bradford, deceased, Donna Ana County, New Mexico.	Horses and mules.	do	May 26, '69	Sept. 23, '70
672	Davidson, John, Choteau County, Montana.	Horses, provisions, &c.	Piegau.....	Feb. 18, '68, '69.	Mar. 26, '69
963	Davis, W. E., Denton Creek, Texas.	Horses.....	Kiowa.....	Oct. 5, '70	Nov. 21, '71
481	Deon, Samuel, Pine Ridge Agency, Dak.	Horses and cows..	Ogalalla Sioux....	Oct., '54, Mar., '65.	1866
697	Desmaris & Co., M., Las Vegas, N. Mex.	Mules, horses, &c.	Cheyenne.....	Aug. 19, '68	June 9, '69
3401	Dickerman, A. F., Oswego, Kans.	Horses.....	Osage.....	1864-1865	Mar. 14, '74
598	Dickinson, A. F., Morris County, Kansas.	Household goods, &c.	Cheyenne.....	June 4, '68	Aug. 12, '68
911	Dodge, W. E., Dakota	Horses.....	Sioux	Oct. and Sept., '70.	Feb. 23, '71
267	Dolan, Owen, Saint Joseph, Mo.	Mules	do	May 25, '67	July 1, '67
1209	Dow, Eugene W., Lincoln County, New Mexico.	Horses.....	Mescalero Apache	Aug. 13, '71	Mar. 27, '73
1233*	Drennen, Lewis W., Arispie, Kans.	do	Arapaho.....	May 29, '70	June 10, '73
1169	Drew & Badger, Kansas.....	Wagons and cattle.	Sioux	May 5, '65	Feb. 17, '73
514	Duval, Michael, Fort Laramie, Wyo.	Horses, wagons, &c.	Cheyenne, Arapaho, and Sioux.	June, '65, July, '66	Nov. 11, '67
599	Edwards, John M., Morris County, Kansas.	Cattle	Cheyenne.....	June 4, '68	Aug. 12, '68
420	Edwards, Albert, Nemaha County, Nebraska.	Clothing.....	Kiowa and Arapaho.	July 18, '64	Nov. 30, '66
629	Ellis, Joseph, Yankton, Dak. (Supposed to be.)	Oxen	Minneconjou Sioux.	April, '68	Sep. 12, '68
1372*	Esquibel, Miguel, Tecolote, New Mexico.	Oxen and horses..	Navajo	Nov. 15, '64	July 1, '74
1156	Felderwerd, J. & J. O'Loughlin, Del Norte County, Cal.	Cattle, &c	Rogue River.....	Oct. 25, '55	Jan. 14, '73
1227*	Fisher, John J., Thayer County, Nebraska.	Horses	Pawnee.....	May 28, '69	May 22, '73
304	Fisher, M. C., Denver, Col....	Mules	Kiowa.....	Aug. 30, '60	Apr. 2, '61
2862*	Foster & Co., H. M., Denver, Col.	Cattle, wagons, merchandise, &c.	Cheyenne, Arapaho, and Sioux.	Jan., '65	June 22, '82

* Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$231 40	\$125 00	.....	1886. Sept. 7	Art. 1, treaty of Oct. 28, 1867, 15 Stats., 593; arts. 1 and 2, treaty of Oct. 14, 1865, 14 Stats., 704.	See claim S. Armijo, No. 196.
20,100 00	7,600 00	.....	Dec. 4	Art. 1, treaty of May 10, 1868, 15 Stats., 655.	Do.
603 00	.....	\$603 00	Nov. 23	Treaty of Oct. 17, 1865, 11 Stats., 657.	
255 00	180 00	.....	Dec. 2	Art. 1, treaty of Oct. 21, 1867, 15 Stats., 581.	Interest in 11 installments of \$30,000 each, equal \$330,000, as per treaty, 15 Stats., 584, sec. 10.
900 00	.....	900 00	Nov. 24	Treaty of Feb. 18, 1861, 12 Stats., 1163; treaty of Sept. 17, 1851, Indian laws, 377.	
19,100 00	8,625 00	.....	Nov. 24	Art. 1, treaty of Oct. 28, 1867, 15 Stats., 593.	See claim S. Armijo, No. 196.
2,520 00	.....	2,520 00	Oct. 16	Treaty of Nov. 10, 1808, 7 Stats., 107; treaty of Sept. 29, 1865, 14 Stats., 687.	
286 25	143 00	.....	Dec. 4	Art. 1, treaty of Oct. 28, 1867, 15 Stats., 593.	Do.
150 00	.....	150 00	Sept. 6	.....	
1,800 00	.....	1,800 00	Oct. 16	Treaty of Oct. 14, 1865, 14 Stats., 699.	
400 00	250 00	.....	Dec. 7	Arts. 1 and 3, treaty of July 1, 1852, 10 Stats., 979.	No treaty funds.
450 00	255 00	.....	Sept. 6	Arts. 1 and 2, treaty of Oct. 14, 1865, 14 Stats., 703: art. 1, treaty of Oct. 28, 1867, 15 Stats., 593.	
46 55	.....	46 55	Nov. 24	Treaty of February 26, 1859, revised treaty, 1047.	
1,005 00	515 00	.....	Oct. 16	Arts. 5 and 2, treaty of July 6, 1825, 7 Stats., 256; arts. 5 and 2, treaty of February 18, 1861, 12 Stats., 1163.	Cheyenne and Arapaho interest in ten installments, \$20,000 equal \$200,000 as per treaty, 15 Stats., 596, sec. 10; Sioux interest in twelve installments, \$13,000 each, \$1,560,000, as per treaty, 15 Stats., 638, sec. 10.
505 00	242 50	.....	Nov. 26	Art. 1, treaty of May 10, 1868, 15 Stats., 655.	See claim S. Armijo, No. 196.
67 00	.....	67 00	Nov. 24	Treaty of July 27, 1853, 10 Stats., 1013; treaty of October 14, 1865, 14 Stats., 703.	
200 00	.....	200 00	Sep. 13	Treaty of April 29, 1868, 15 Stats., 635.	
2,900 00	1,510 00	.....	Oct. 19	Art. 5, treaty of September 24, 1850, 9 Stats., 974.	
7,380 00	.....	7,390 00	Sep. 22	Treaty of September 10, 1883, 10 Stats., 1019.	
735 00	441 00	.....	Nov. 27	Art. 5, treaty of September 24, 1857, 11 Stats., 729.	
300 00	150 00	.....	Sep. 18	Art. 8, treaty of July 27, 1853, 10 Stats., 1013.	Interest in eleven installments, \$30,000 each, \$330,000, as per treaty, 15 Stats., 584, sec. 10.
51,600 00	16,713 00	.....	Sep. 30	Art. 2, treaty of May 10, 1868, 15 Stats., 655; art. 1, treaty of October 28, 1865, 14 Stats., 747.	

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
1243	Fox, Ambrose P., Fort Parker, Montana.	Mules	Oukpahpah Sioux.	Sep. 21, '72	July 28, '73
638*	Fuller, C. O., Marion County, Kansas.	Mules and horses.	Kioawa	July 22, '64	Nov. 5, '68
869	Gallegos, Pedro B., Rio Arriba County, New Mexico.	Horses	Navajo	Nov. 4, '69	Jan. 24, '71
1398*	Garcia Candelario, San Miguel County, New Mexico.	do	do	Aug. 1, '63	Aug. 19, '74
433	Gentry, Albert M., Nemaha County, Nebraska.	Wagon sheets, &c.	Kiowa and Arapaho.	July 18, '64	Nov. 30, '66
2642	Goff, Oliver D., Portland, Oreg.	Horses, saddle	Ute	Oct. 1, '79	Jan. 5, '81
1356	Gonzales, Jose D., Santa Fé, N. Mex.	Cattle	Navajo	Mar. 15, '62	May 13, '74
501	Goodwin, Oliver P., Lush, Wyo.	Horses, cattle	Ogalalla and Bulé Sioux.	June 14, '65	June 27, '66
2913	Gordon, George, Carbon County, Wyoming.	Cattle, merchandise, &c.	Ute	Sept., '79	Feb. 3, '83
2855*	Gorner or Gomer, P. P., Denver, Colo.	Horses, &c	Cheyenne and Arapaho.	June, '64	June 22, '82
1309	Gray, John D., Belton, Bell County, Texas.	Horses, cattle	Kiowa and Comanche.	1863 to 1867	Mar. 14, '74
1111	Gregg, John H., Los Angeles County, California.	Cattle	Pima and Maricopa.	Nov. '70 to Apr., '71	Oct. 29, '72
633	Greenway, A. J., Marion County, Kansas.	Horses	Keechie	Sept. 30, '66	Nov. 8, '68
636	Green, P. H., Marion County, Kansas.	Mules, cattle, &c..	Kiowa, Comanche, Cheyenne, and Arapaho.	July, '64	Oct. 8, '68
1152	Gregory, M. B., Del Norte County, California.	Household goods, &c.	Rogue River	1856	Jan. 14, '73
601	Grigsby, Aaron, Marion County, Kansas.	Blankets, provisions, &c.	Cheyenne	June 1, '68	Aug. 17, '68
517½	Guern, Charles E., Fort Laramie, Wyo.	Horses	Sioux	Apr. 27, '67	Nov. 2, '67
1219	Harris, James M., White River Agency, Colo.	One horse	Ute	Feb. 13, '73	Apr. 10, '73
608	Hall, Hiram A., residence unknown.	Mules, horse, &c .	Cheyenne	Aug. 4, '67	Aug. 28, '68
549	{ Hall and Gregory, Ellsworth, County, Kansas.	{ ..do	do	1867	Jan. 24, '68
1137	{ Hance, Morgan A., Laramie City, Wyo.	{ Mules, horses, &c.	Ogalalla and Brulé Sioux.	June and July, 1867.	Sept. 22, '69
730½					
2641	Haug, Geo. J., Denver, Colo.	Horses	Ute	Oct. 3, 1879	Jan. 5, '81
848	Hardison, Charles, Fort Defiance, Ariz.	Money	Navajo	Feb. 2, 1870	Nov. 25, '70
1221½*	Herd, John, Leavenworth County, Kansas.	Horses and mules.	Cheyenne	Nov. 12, '64	Apr. 29, '68
670	Harkins, Dennis, Saline County, Kansas.	Horses	Pawnee	Oct. 15, '67	Mar. 24, '69
1164	Harper, Elizabeth, Wise County, Texas.	do	Kiowa and Comanche.	May 14, '72	Feb. 17, '73
1265	Hazlewood, Eliza, Erath County, Texas.	do	do	1871, '72, '73	Nov. 8, '73
623	Henning, Conrad, Leavenworth County, Kansas.	Mules	Cheyenne	Nov. 12, '64	Apr. 29, '68
333	Helber, Basil, Choteau County, Montana.	Horses	Blood Indians	July, Oct., 1866.	Aug. 9, '67
1282½	Higgins, C. P., and Warden, F. L., Missoula County, Montana.	Fencing, rails, &c.	Pend d'Oreille and Kootenai.	1873.	Jan. 7, '74
431					

* Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$1,050 00	\$600 00		1886. Dec. 7	Art. 1, treaty of October 20, 1865, 14 Stats., 739.	Interest in twelve installments, \$130,000 each, \$1,560,000, as per treaty, 15 Stats., 638, sec. 10.
275 00	225 00	.....	Oct. 18	Art. 8, treaty of July 27, 1853, 10 Stats., 1014.	
345 00	.....	\$345 00	Nov. 23	Treaty June 1, 1868, 15 Stats., 667.	
1,800 00	960 00	.....	Nov. 26	Art. 2, 3, treaty Sept. 9, 1849, 9 Stats., 974.	
119 50	.....	119 50	Nov. 24	Treaty July 27, 1853, 10 Stats., 1013; treaty Oct. 14, 1865, 14 Stats., 703.	
2,550 00	2,550 00		Nov. 27	Art. 6, treaty Mar. 2, 1868, 15 Stats., 619.	Interest in 11 installments, \$30,000 each, \$330,000, as per treaty. 15 Stats., 622, sec. 11.
2,100 00	.....	2,100 00	Oct. 19	Treaty Sept. 9, 1849, 9 Stats., 974.	
1,915 00	.....	1,915 00	Dec. 8	Treaty June 22, 1825, 7 Stats., 252; revision treaties, 1048.	
8,084 25	4,424 20	.....	Sept. 16	Art. 6, treaty Mar. 2, 1868, 15 Stats., 619.	
1,250 00	775 00	.....	Sept. 15	Art. 2, treaty Oct. 14, 1865, 14 Stats., 704.	
550 00		550 00	Nov. 23	Treaty July 27, 1853, 10 Stats., 1013.	See claim O. D. Goff, No. 2642.
2,145 00	.....	.....	.....	.....	
1,000 00	.....	1,000 00	Sept. 25	Treaty Mar. 8, 1847, 9 Stats., 845.	
3,839 35	1,900 00	.....	Dec. 4	Art. 4, treaty July 27, 1853, 10 Stats., 1013; art. 2, treaty Feb. 18, 1861, 12 Stats., 1163.	
1,388 00	.....	1,388 00	Dec. 1	Treaty Sept. 10, 1853, 10 Stats., 1018.	
232 95	108 15		Dec. 13	Art. 2, treaty Oct. 14, 1865, 14 Stats., 703.	Cheyenne and Arapaho; interest in 10 installments, \$20,000 each, \$200,000, as per treaty. 15 Stats., 596, sec. 10. See claim S. Armijo, No. 196.
1,600 00	.....	1,600 00	Nov. 24	Treaty Oct. 28, 1865, 14 Stats., 747.	
150 00	.....	150 00	Dec. 18	Treaty Nov. 6, 1868, 15 Stats., 619.	
2,542 00	1,442 00	.....	Nov. 23	Art. 2, treaty Oct. 14, 1865, 14 Stats., 703.	
11,267 60	2,278 00	.....	Dec. 3	Art. 1, treaty Oct. 14, 1865, 14 Stats., 703.	
5,250 00	3,125 00		Nov. 24	Art. 2, treaty Oct. 14, 1865, 14 Stats., 699; art. 2, treaty Oct. 28, 1865, 14 Stats., 747.	Interest in twelve installments, \$130,000 each, \$1,560,000, as per treaty. 15 Stats., 638, sec. 10.
3,050 00	2,000 00	.....	Dec. 6	Art. 6, treaty Mar. 2, 1868, 15 Stats., 619.	
510 00	.....	510 00	Nov. 24	Treaty June 1, 1868, 15 Stats., 667.	
320 00	200 00	.....	Dec. 2	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1163.	
270 00	.....	270 00	Nov. 24	Treaty Sept. 24, 1857, 11 Stats., 729.	
300 00	200 00		Nov. 27	Art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	Interest in eleven installments, \$30,000 each, \$330,000, as per treaty. 15 Stats., 584, sec. 10.
1,655 00	.....	1,655 00	Sept. 9	Treaty Oct. 21, 1867, 15 Stats., 581.	
400 00	250 00	.....	Dec. 2	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1163.	
4,215 00	.....	4,215 00	Oct. 16	Treaty Oct. 17, 1855, 11 Stats., 657.	
400 00	100 00	.....	Sept. 9	Art. 8, treaty July 16, 1855, 12 Stats., 976.	
					No treaty funds,

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
	Hiles, John, Big Sandy, Nebraska.	Oxen, wagon-sheets, &c.	Kiowa and Arapaho.	July 18, '64	Nov. 30, '66
731	Holmes, Myron J., Omaha City, Nebraska.	Mules	Ogalalla Sioux....	July 7, '67	Sept. 25, '69
594	Holmes, Courtney, Morris County, Kansas.	Horses.....	Osage.....	Dec. 16, '67	June, 1868
934	Huff, Joseph, Upton, Utah ..	do	Ute	June 21, '71	Aug. 18, '71
2807	Hulett, J. D. and C. T., Routt County, Colorado.	do	do	Sept., 1879	Dec. 15, '81
1113	Hunning, Franz, Albuquerque, N. Mex.	Money, clothing, &c.	Cheyenne.....	Sept. 7, '67	Oct. 26, '72
1293	Hunt, Joseph, Dakota	Horses.....	Devil's Lake Sioux	Aug., 1873	Dec. 7, '73
302	Huntington, John, Leavenworth, Kans.	Oxen, provisions, &c.	Cheyenne.....	Mar. 6, '59	Apr. 2, '61
498	Janis, Antoine, Cache La Poudre, Colorado.	Horses.....	Sioux.....	June and July, 1865	July 6, '66
1249	Janis, Antoine, Pine Ridge Agency, Dak.	Mules and horses.	Ogalalla Sioux	June, 1871	June 28, '73
1263*	Jenks, Lorin S., Yavapai County, Arizona.	Mules	Apache Mohaves .	Aug., 1870	Nov. 6, '73
752	Jimenez, Manuel, San Miguel County, New Mexico.	Horses, sheep, &c.	Navajo.....	Aug. 11, '67	Jan. 26, '70
528	Jones, John, Council Bluffs, Iowa.	Mules, wagons, &c.	Sioux	Aug., 1866	Nov. 6, '67
486	Jott, Sefroy, Fort Laramie, Wyo.	Horses.....	do	June 14, 65	Feb., 1867
252	Kahl, W. D., Morris County, Kansas.	Sheep.....	Kansas Indians ...	June, 1865	Aug. 3, '65
772	Kitterman, M., Neosho County, Kansas.	Horses.....	Osage.....	Oct., 1866	Feb. 27, '67
425	Knight, James C., Nemaha County, Nebraska.	Blankets, clothing, &c.	Kiowa and Arapaho.	July 18, '64	Nov., 1866
451	Ladd, J. W., Oshkosh, Wis.	Mules, horses.....	Kiowa	June, 1865	Mch. 29, '67
529	Lang, George W., Leavenworth, Kans.	Beeves.....	Cheyenne and Sioux.	1866, 1867	Nov. 28, '67
1215½	Larn, John, Shackelford County, Texas.	Horses.....	Comanche	July, [1872	Apr. 11, '73
2824*	La Rue, J. A., Lincoln County, New Mexico.	Merchandise, &c..	Navajo	Nov., 1863	Feb. 10, '82
518	Lebeau, Antoine, Fort Laramie, Wyo.	Horses.....	Sioux	1865	Nov., 1867
579	Ledrick & Whittaker, Morris County, Kansas.	Merchandise, &c..	Cheyenne.....	Feb., Sept. 1867	May 21, '68
591	Lockwood, R. B., Morris County, Kansas.	Household goods, &c.	do	June, 1868	Aug. 21, '68
2287	Lopez, Francisco, San Miguel County, New Mexico.	Oxen, cows	Jicarilla Apache..	Nov. 19, '64	Mar. 31, '55
798	Lopez, Prudencio, San José, N. Mex.	Mules	Kiowa and Arapaho.	Nov. 23, '69	May 13, '70
487	Louanne, Antoine, Fort Laramie, Dak.	Horses.....	Ogalalla Sioux....	Mar. 4, '65	Feb., 1867
2305	Luna, Rafael, Valencia County, New Mexico.	Sheep and cows...	Navajo	Oct., 1849	Dec. 20, '54
701	Lucero, Juan, San Miguel County, New Mexico.	Cattle	Kiowa	July, 1867	June 9, '69

* Barred,

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$371 50	\$218 50	.....	1886. Nov. 27	Art. 4, treaty July 27, 1853, 10 Stats., 1013; art. 1, treaty Feb. 18, 1861, 12 Stats., 1163.	See claim above, R. F. Barrett, No. 421.
500 00	300 00	.....	Nov. 20	Art. 1, 2, 3, treaty Oct. 28, 1865, 14 Stats., 747.	See above claim, M. A. Hance, No. 730½.
715 00	.....	\$715 00	Dec. 7	Treaty Nov. 10, 1808, 7 Stats., 107; treaty Sept. 29, 1865, 14 Stats., 687.	
400 00	.....	400 00	Sept. 9	Treaty Mar. 2, 1868, 15 Stats., 619.	
8,000 00	7,800 00	.....	Sept. 13	Art. 6, treaty Mar. 2, 1868, 15 Stats., 620.	See above claim, G. J. Haugs, No. 2641.
550 00	.....	550 00	Nov. 23	Treaty Feb. 18, 1861, 12 Stats., 1163.	
100 00	.....	100 00	Nov. 23	Treaty Feb. 19, 1867, 15 Stats., 505.	
1,067 00	208 00	.....	Oct. 19	Art. 5, treaty July 6, 1825, 7 Stats., 256.	See claim above, S. Armijo, No. 196.
2,500 00	1,625 00	.....	Oct. 21	Art. 1 and 5, treaty July 5, 1825, 7 Stats., 252.	Interest in 12 installments, \$130,000 each, \$1,560,000, as per treaty. 15 Stats., 638, sec. 10.
1,065 00	530 00	.....	Dec. 7	Art. 1, treaty April 29, 1868, 15 Stats., 635.	Same as above claim, No. 1249.
300 00	250 00	.....	Nov. 24	Art. 1, 2, 3, treaty July 1, 1852, 10 Stats., 979.	
13,582 00	5,135 00	.....	Dec. 7	Art. 3, treaty Sept. 9, 1849, 9 Stats., 974.	No treaty funds.
1,150 00	560 00	.....	Oct. 16	Art. 6, treaty June 19, 1858, 12 Stats., 1038.	See above claim, A. Janis, No. 1249.
3,850 00	.....	3,850 00	Nov. 23	Treaty Sept. 17, 1851, Ind. laws, 317.	
45 00	.....	45 00	Oct. 18	Treaty Oct. 5, 1859, 12 Stats., 1111; treaty March 13, 1862, 12 Stats., 1221.	
200 00	.....	200 00	Oct. 19	Treaty Sept. 29, 1865, 14 Stats., 687.	
56 00	.....	56 00	Nov. 23	Treaty July 27, 1853, 10 Stats., 1013; treaty Feb. 18, 1861, 12 Stats., 1163.	
1,150 00	600 00	.....	Oct. 16	Art. 4, treaty July 27, 1853, 10 Stats., 1013.	Interest in 11 installments, \$30,000 each, \$330,000, as per treaty. 15 Stats., 584, sec. 10.
9,943 00	.....	9,943 00	Oct. 18	Treaty Oct. 17, 1865, 14 Stats., 713; treaty Oct. 14, 1865, 14 Stats., 699.	
1,800 00	780 00	.....	Dec. 2	Art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	See above claim, J. W. Ladd, No. 451.
8,620 00	936 00	.....	Sept. 22	Art. 3, treaty Sept. 9, 1849, 9 Stats., 974.	
2,700 00	1,350 00	.....	Nov. 23	Art. 4, treaty Sept. 17, 1851, Ind. laws, 317.	See above claim, A. Janis, No. 498.
18,472 00	6,800 00	.....	Oct. 21	Art. 1, treaty Oct. 14, 1865, 14 Stats., 703.	See claim above, S. Armijo, No. 196.
847 75	325 87½	.....	Oct. 18	Art. 1, treaty Oct. 28, 1867, 15 Stats., 593.	See claim above, S. Armijo, No. 196.
470 00	225 00	.....	Dec. 2	Art. 1, 2, 3, 4, treaty July 1, 1852, 10 Stats., 979.	No treaty funds.
10,000 00	5,200 00	.....	Oct. 21	Art. 1, treaty Oct. 28, 1867, 15 Stats., 593, and art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	Kiowa interest in 11 installments. \$30,000 each, \$330,000, as per treaty. 15 Stats., 584, sec. 10.
900 00	.....	900 00	Dec. 1	Treaty July 5, 1825, 7 Stats., 252.	Arapahoe interest in 10 installments, \$20,000 each, \$200,000, as per treaty, 15 Stats., 596, sec. 10.
700 00	.....	700 00	Sept. 9	Treaty Sept. 9, 1849, 9 Stats., 974.	
4,395 00	1,750 00	.....	Dec. 3	Art. 1, treaty Oct. 18, 1865, 14 Stats., 717.	Interest in 11 installments, \$30,000 each, \$330,000, as per treaty. 15 Stats., 584, sec. 10.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
2297	Luna, Francisco, Socorro County, New Mexico.	Horses.....	Gila Apache.....	Nov. 6, '53	Dec. 20, '54
1221	Mackeldai, Johanne M. (now Johanne M. Steffins), Saint Joseph, Mo.	do	Cheyenne.....	Nov. 12, '64	Sept. 16, '68
966	Marino, José Padillo y, Pajarito, N. Mex.	Sheep	Navajo	Mar. 6, '71	Nov. 25, '71
574*	Martin, Samuel J., Morris County, Kansas.	Horses, cattle, &c.	Kiowa and Comanche.	July, 1864	Apr. 18, '68
1252	Matson, William, Platte County, Nebraska.	Timber	Pawnee.....	Mar. 21, '73	Aug. 2, '73
634	Maxwell, George, Las Vegas, N. Mex.	Mules, &c	Cheyenne.....	Aug. 19, '68	Oct. 17, '68
3632*	Meade, J. R., Butler County, Kansas.	Horses, &c.....	Pawnee.....	Mar. 10, '68	Mar. 14, '74
547	Meade, J. R., Towanda County, Kansas.	Provisions, &c. ...	Cheyenne.....	June, 1867	Jan. 11, '68
490	Meliton, José, residence unknown.	Horses.....	Ogalalla Sioux....	Mar. 30, '65	July 13, '66
739	Middlemist, Alexander, Lincoln County, New Mexico.	Cattle	Navajo	July and Sept., '69	Nov. 19, '69
906	Midkiff, William, Cook County, Texas.	Horses and mules.	Kiowa and Comanche.	Aug. 28, '68	Apr. 1, '71
1155	Miller, A. F., Curry County, Oregon.	Horse, houses, &c.	Rogue River.....	1856	Jan. 14, '73
2368	Moore, Samuel C., Douglas County, Oregon.	House, grain, &c..	Umpqua	do	Mar., 1858
698	Montoya, Miguel, Las Vegas, N. Mex.	Horses, oxen, &c..	Kiowa and Comanche.	July, '67	June 9, '69
754	Moore & Co., W. H., Mora County, New Mexico.	Mules	Cheyenne.....	May, '69	Jan. 29, '70
197	Montoya, Juan, Lamitar County, New Mexico.	Mules and horses.	Kiowa	May, '67	Dec. 9, '67
1384	Mora, Jesus Abram, San Miguel County, New Mexico.	Sheep, jacks, &c ..	Navajo	1862	Aug. 8, '74
595	Mousseau, M. A., Fort Laramie, Dak.	Oxen, cows, &c....	Sioux	Mar. 21, '68	Aug. 25, '68
511	Morain, Narcisse, Fort Laramie, Wyo.	Horses.....	do	1867	Nov. 4, '67
2345	Mores, Juan de Jesus, Taos County, New Mexico.	Cattle and horses.	Jacarillo Apaches.	June, '53, '55.	Sept. 26, '55
1296*	Murphy, D. J., Jackborough, Tex.	Mules and corn...	Comanche	Dec., '69	Feb. 5, '74
945	Murry, Wm., Parker County, Texas.	Horses.....	Kiowa and Comanche.	May, June, Dec., '68.	Sept. 6, '71
1214	McAllister, Jerome, Erath County, Texas.	Mules, horses, &c.	Comanche	Feb. 20, '72	Apr. 7, '73
1472	McCarty, Chas. H., Bismarck, Dak.	Mules	Sioux	Aug., '72, Apr., '73.	Dec. , '74
1280	McCarty, Thomas, Shackelford County, Texas.	Horses and mules.	Kiowa and Comanche.	1871-1872	Dec. 10, '73
715	McClure, Robert, Grant Co., Oregon.	Bedding, clothing, &c.	Oregon Snakes....	Mar. 27, '68	Aug. 20, '69
2367	McCullough, A. E., Douglas County, Oregon.	House burned	Cow Creek.....	1856	1858
1326	McCoy, Lewis, Dodge City, Kans.	Horses, wagons, &c.	Kiowa	Nov. 21, '73	Mar. 24, '74
1255	McDonald, B. P., residence unknown.	Beeves.....	Cow Creek	Jan., '73	Apr. 18, '73

* Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$130 00	.....	\$130 00	1886. Nov. 23	Treaty July 27, 1853, 10 Stats., 1013, and treaty July 1, 1852, 10 Stats., 979.	
320 00	.....	320 00	Sept. 13	Treaty Feb. 18, 1861, 12 Stat., 1163.	
733 50	.....	733 50	Oct. 16	Treaty June 1, 1868, 15 Stats., 667.	
4,139 65	\$2,075 00	.....	Nov. 27	Art. 4, 8, treaty July 27, 1853, 10 Stats., 1013.	
115 00	.....	115 00	Nov. 19	Treaty Sept. 24, 1857, 11 Stats., 729.	
17,629 00	5,625 00	.....	Oct. 21	Art. 1, treaty May 10, 1868, 15 Stats., 655.	See claim above, S. Armijo, No. 196.
365 00	235 00	.....	Oct. 21	Art. 5, treaty Sept. 24, 1857, 11 Stats., 729.	
1,640 28	820 14	.....	Dec. 4	Art. 1, treaty Oct. 14, 1865, 14 Stats., 703.	See claim above, S. Armijo, No. 196.
700 00	.....	700 00	Nov. 23	Treaty Feb. 26, 1859; Rev. Ty, 1047.	
208 74	.....	208 74	Nov. 23	Treaty Sept. 9, 1849, 9 Stats., 974.	
10,000 00	1,425 00	.....	Dec. 1	Art. 1, 11, treaty Oct. 21, 1867, 15 Stats., 581.	See above claim, J. Lucero, No. 701.
3,452 50	.....	3,452 50	Sept. 2	Treaty June 25, 1855, 12 Stats., 966, and treaty Sept. 19, 1853, 10 Stats., 1028.	
1,332 00	500 00	.....	Sept. 22	Art. 6, treaty Sept. 19, 1853, 10 Stats., 1028.	No treaty funds.
2,120 00	880 00	.....	Dec. 3	Art. 1, treaty of Oct. 18, 1865, 14 Stats., 717.	Interest in 11 instalments \$3,100 each, \$330,000, as per treaty, 15 Stats., 584, sec. 10.
46,120 00	22,950 00	.....	Oct. 16	Art. 1, treaty of Oct. 28, 1867, 15 Stats., 593.	See claim, S. Armijo, No. 196.
10,500 00	2,850 00	.....	Dec. 2	Art. 1, treaty of Oct. 17, 1865, 14 Stats., 703.	See above claim, M. Montoya, No. 698.
7,618 00	.....	7,618 00	Oct. 16	Treaty of Sept. 9, 1849, 9 Stats., 974.	
7,110 00	2,513 75	.....	Dec. 4	Art. 1, treaty of Oct. 28, 1865, 14 Stats., 747.	Interest in 12 instalments, \$130,000 each, \$1,560,000, as per treaty, 15 Stats., 638, sec. 10.
3,800 00	.....	3,800 00	Nov. 27	Treaty of June 19, 1858, 12 Stats., 1031.	
2,530 00	900 00	.....	Oct. 21	Art. 1, 2, 3, 4, treaty of July 1, 1852, 10 Stats., 979.	No treaty fund.
10,350 00	1,875 00	.....	Dec. 4	Art. 1, treaty of Oct. 21, 1867, 15 Stats., 581.	
1,500 00	.....	1,500 00	Dec. 21	Treaty of Oct. 21, 1867, 15 Stats., 581; treaty of June 30, 1834, 4 Stats., 732.	
1,500 00	725 00	.....	Nov. 19	Art. 1, treaty of Oct. 21, 1867, 15 Stats., 581.	See above claim, M. Montoya, No. 698.
1,275 00	625 00	.....	Dec. 3	Art. 1, treaty of Apr. 29, 1868, 15 Stats., 635.	See above claim, M. A. Mousseau, No. 595.
500 00	.....	1,500 00	Sept. 22	Treaty of Oct. 21, 1867, 15 Stats., 581.	
1,410 82	210 00	.....	Nov. 27	Art. 9, treaty of Oct. 14, 1864, 16 Stats., 707.	No treaty fund.
200 00	150 00	.....	Sept. 27	Art. 6, treaty of Sept. 19, 1853, 10 Stats., 1028.	Do.
984 00	.....	984 00	Dec. 8	Treaty of Oct. 21, 1867, 15 Stats., 581.	
1,845 00	.....	1,845 00	Sept. 6	Treaty of July 27, 1853, 10 Stats., 1013.	

A list of depredation claims in favor of citizens of the United States

No.	Names of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
1037	McDonald, Donald L., Cloud County, Kansas.	Corn and wheat ..	Cheyenne.....	June 12, '69	Apr. 1, '72
1236	McIntosh, T. W., Phoenix, Ariz.	Horses, saddles, &c.	Apache.....	Oct., '72	June 17, '73
540	McKee & Co., H. E., residence unknown.	Cattle	Kaw.....	Mar., '67	Jan. 4, '68
1150	McVay, J. A. J. and J. H., Del Norte County, California.	Houses, oxen, &c.	Rogue River.....	1856-1858	Jan. 14, '73
612	Nance, John, Marion County, Kansas.	Cows, &c	Cheyenne.....	June, '68	Sept. 2, '68
1010	Nelson, sr., Nels. and N. N., jr., Cloud County, Kansas.	Stock-property, &c.	do	June 2, '69	Jan. 19, '70
35	Newell, R. S., Kansas	Houses, hay, &c ..	Pawnee.....	Dec. 15, '58	Nov. 21, '59
604	O'Byrnes, Patrick, Morris County, Kansas.	Cow, turkeys, &c ..	Cheyenne.....	June, '68	Aug. 21, '68
1543	O'Laughlin, Thomas, Foot County, Kansas.	Dwelling, groceries, &c.	Southern Cheyenne.	Sept. 15, '74	Mar. 26, '75
605	O'Meshe, James, Morris County, Kansas.	House	Cheyenne.....	June 3, '68	Aug. 22, '68
569	Ortega, Albino, San Miguel County, New Mexico.	Horses, wagon, &c.	Kiowas	Sept., '67	Mar. 24, '68
600	Owen, Charles, Morris Co., Kansas.	Clothing.....	Cheyenne.....	June, '68	Aug. 12, '68
588	Pappan, H., Morris County, Kansas.	Furniture, goods, &c.	do	June 3, '68	July 24, '68
1087	Pallardy, Leon F., Lincoln County, Nebraska.	Cash and horses ..	Brulé Sioux	June, '65	Sept. 30, '72
592	Pashall, Louis, Morris Co., Kansas.	Furniture, tools, &c.	Cheyenne.....	June 3, '68	Aug. 21, '68
993	Patterson, Samuel C., Socorro County, New Mexico.	Horses, mules	Apache.....	July 15, '70	Dec. 29, '71
1091	Peel, Hiram H., Saint Anthony, Minn.	Horses	Sisseton Sioux....	1861	June 10, '63
771	Pentzer, Daniel, Elk Creek, Kans.	do	Osage.....	1866	Nov. 27, '66
1495	Phillips, F. M., Laramie County, Wyoming.	do	Ogalalla Sioux....	May, '72	Jan. 27, '75
66	Piatt, Richard F., <i>et al.</i> , Yuba County, California.	Cattle	Arapahoe.....	June 20, '57	July 28, '58
550	Playter, Thaddeus E., Ellsworth County, Kansas.	Mules, provisions.	Cheyenne and Arapahoe.	June, '67	Jan. 24, '68
603	Polk, John P., Morris County, Kansas.	Clothing, &c	Cheyenne.....	June 3, '68	Aug. 21, '68
593	Polk, William, Morris County, Kansas.	Household goods, &c.	do	June, '68	Aug. 22, '68
420	Porter, Henry B., Nemaha County, Nebraska.	Wagon, sheets, &c.	Kiowa and Arapahoe.	July 18, '64	Nov., '66
936	Powell, Edward, Upton, Utah.	Horses.....	Utes	June 12, '71	Aug. 18, '71
1235	Powell, jr., J. W., Lincoln County, Dakota.	Cow	Sioux	Oct. 2, '72	July 13, '73
668	Prescott, John H., Saline County, Kansas.	Horses.....	Pawnee.....	Oct. 15, '67	Mar. 24, '69
883	Preston, James T., Palo Pinto County, Texas.	Horses, merchandise, &c.	Osage.....	1870	Jan. 25, '71
814	Purcell & Echelberger, Pike County, Illinois.	Beeves, stock cattle, &c.	Creek.....	Aug. 20, '69	Sept. 24, '70

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$1,090 00	.....	\$1,090 00	1885. Dec. 13	Treaty of Oct. 14, 1865, 14 Stats., 703.	
564 75	.....	564 75	Sept. 2	Treaty of July 1, 1852, 10 Stats., 979.	
5,000 00	.....	5,000 00	Oct. 16	Treaty of June 3, 1825, 7 Stats., 244.	
7,110 00	.....	7,110 00	Sept. 4	Treaty of Sept. 10, 1853, 10 Stats., 1018.	
142 50	\$75 00	.....	Nov. 23	Art. 1, treaty of May 10, 1868, 15 Stats., 655.	See claim above, S. Armijo, No. 196
1,583 30	800 00	.....	Dec. 17	Art. 1, treaty of Oct. 28, 1867, 15 Stats., 593.	Do.
3,113 50	2,000 00	.....	Dec. 7	Art. 5, treaty of Sept. 24, 1857, 11 Stats., 729.	Annuity \$30,000, as per treaty, 11 Stats., 729, sec. 2.
75 00	50 00	.....	Oct. 20	Art. 1, treaty of Oct. 28, 1867, 15 Stats., 593.	See claim above, S. Armijo, No. 196.
6,005 77½	4,320 77½	.....	Dec. 6	do.....	Do.
600 00	.....	600 00	Nov. 23	Treaty of Oct. 28, 1867, 15 Stats., 593.	
2,768 28	831 00	.....	Dec. 7	Art. 1, treaty of Oct. 18, 1865, 14 Stats., 717.	See claim above, M. Montoya, No. 698.
837 50	418 75	.....	Nov. 27	Art. 1, treaty of May 10, 1868, 15 Stats., 655.	See claim above, S. Armijo, No. 196.
207 00	167 00	.....	Dec. 7	Art. 2, treaty of Oct. 14, 1865, 14 Stats., 703.	Do.
1,000 00	.....	1,000 00	Nov. 23	Laramie treaty of Sept. 17, 1851, Ind. laws, 317.	
454 00	250 50	.....	Dec. 9	Arts. 1, 2, treaty of Oct. 14, 1865, 14 Stats., 703.	Do.
5,000 00	1,600 00	.....	Dec. 4	Arts. 2, 3, treaty of July 1, 1852, 10 Stats., 979.	See claim above, M. Montoya, No. 698.
320 00	320 00	.....	Nov. 23	Art. 6, treaty of June 19, 1858, 12 Stats., 1037.	No treaty fund.
650 00	.....	650 00	Oct. 16	Treaty of Sept. 29, 1865, 14 Stats., 687.	
800 00	400 00	.....	Sept. 9	Art. 1, treaty of Apr. 29, 1868, 15 Stats., 635.	See claim above, M. A. Mousseau, No. 595.
14,940 00	6,225 00	.....	Oct. 18	Art. 4, Laramie treaty of Sept. 15, 1851, Ind. laws, 317.	Interest in 10 instalments, \$20,000 each, \$200,000, as per treaty, 15 Stats., 596, sec. 10.
1,298 50	570 00	.....	Dec. 3	Art. 2, treaty of Oct. 14, 1865, 14 Stats., 703.	See above claim, R. F. Piatt, No. 66.
168 00	.....	168 00	Nov. 24	Treaty Oct. 28, 1867, 15 Stats., 593.	
838 25	325 00	.....	Oct. 21	Art. 1, treaty Oct. 28, 1867, 15 Stats., 593.	See claim above, S. Armijo, No. 196.
335 50	.....	335 50	Oct. 20	Treaty July 27, 1853, 10 Stats., 1013; treaty Feb. 18, 1861, 12 Stats., 1163.	
145 00	.....	145 00	Sept. 9	Treaty Mar. 2, 1868, 15 Stats., 619.	
70 00	40 00	.....	Dec. 2	Art. 1, treaty Oct. 20, 1865, 14 Stats., 727, 735, 739.	See claim above, M. Mousseau, No. 595.
351 00	.....	351 00	Nov. 24	Treaty Sept. 24, 1857, 11 Stats., 729.	
1,528 50	.....	1,528 50	Sept. 25	Treaty Sept. 29, 1865, 14 Stats., 689.	
4,475 00	.....	4,475 00	Nov. 23	Treaty June 14, 1866, 14 Stats., 785.	

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
283*	Rameris, Serafin, Bernalillo County, New Mexico.	Horses, mules.....	Mescalero Apache.	1855	Feb. 27, '61
1184	Rankin, William A., Lawrence, Kans.	Cattle and horses	Wichita <i>et al.</i>	Mar., '70	Jan. 30, '72
1118	do	Horses and mules.	Osage.....	July, '70	Oct. 30, '72
455	Rath, Charles, residence unknown.	Mules and horses.	Cheyenne.	May 17, '64	Mar. 29, '67
434	Redding, W. S., Nemaha County, Nebraska.	Clothing, &c.....	Kiowa, Comanche, <i>et al.</i>	July 18, '64	Nov., '66
1194*	Reed, Allan G., Liberty, Mo	Cattle	Cheyenne and Arapahoe.	May 15, '65	Mar., '73
303	Reed & Bradley, Denver, Colo.	Horses and mules.	Kiowa.....	1860	Apr. 2, '61
669	Reese, David, Saline County, Kansas.	One horse.....	Pawnee.....	Oct. 15, '67	Mar. 24, '69
495	Reynal, Antoine, Fort Laramie, Wyo.	Horses and cattle.	Cheyenne.....	July 15, Aug. 21, '64	1866
874	Ricketts, Harvey, Miami County, Kansas.	Revolvers, &c	Osage.....	1869	Jan. 25, '71
432	Riggs, J. L., Monterey, Nebr.	Clothing, &c.....	Kiowa and Arapahoe.	July 18, '64	Nov. 30, '66
929*	Rilliet, Jean Louis, Saint Louis, Mo.	Mules, &c	Minneconjou Sioux	Apr. 10, '68	July 31, '71
1223	Rogers, Jonathan H., Chateau County, Montana.	Wood.....	Gros Ventres	1872.	May 16, '73
639*	Roberts, C. R., Marion County, Kansas.	Horses and cattle	Kiowa	July, 1864, '65.	Nov. 5, '68
589	Robertson, David, Morris Kansas.	Household goods, &c.	Cheyenne.....	June, 1868	Aug. 17, '68
2407	Romero, Haban, Taos County, New Mexico.	Horses, mules	do	Feb., 1852	July 28, '55
2408	Romero, Manuel, Santa Fé County, New Mexico.	Horses	Navajo	Mch., 1852	Dec. 20, '54
1742*	Romero, Manuel, Pine Ridges Agency, Dakota.	Mules, horses, cattle.	Ogalalla Sioux....	1870, 1872.	May 16, '78
2405	Romero, Miguel, Sena y., San Miguel County, N. Mex.	do	Kiowa	July 1, 1858	Jan. 9, '60
1185	Romero, Raphael, Mora Co., New Mexico.	Mules.....	Cheyenne and Sioux.	May 13, '70	Mch. 5, '73
307	Roy, Nathaniel, Huerfano County, California.	Clothing, &c.....	Ute	1866.	Aug. 10, '67
1036	Sagendorf, Andrew, Denver, Colo.	Oxen	do	Mch., 1870	Apr. 1, '72
585	Sanches, A. and P., Nieto, San Miguel Co., New Mexico.	Sheep, &c.....	Navajo	Dec. 17, '65	June 6, '68
2430	Sandoval, Antonio, Bernalillo County, New Mexico.	Sheep.....	do	Dec., 1850	Sept., 1853
568*	Sandoval, Anastacio, Santa Fé County, New Mexico.	Sheep, &c	do	Dec., 1861, 1863.	Apr. 10, '63
935	Saxton, M., Upton, Utah	Horse.....	Ute	June 12, '71	Aug. 18, '71
423	Schroder, James, Nemaha County, Nebraska.	Clothing, &c.....	Kiowa and Arapahoe.	July 18, '64	Nov., 1886
777	Secrest, John, Allan County, Kansas.	Cattle.....	Osage.....	Jan. 13, '66	July 3, '67
974	Seibold, Felix, Plaza de Rio las Palmas, New Mexico.	Grain, blankets, &c.	Southern Apache.	July 30, '71	Nov. 17, '71
773	Sharp, Pearl S., Nelson Co., Kansas.	Horse	Osage.....	Mch., 1866	July 3, '69

Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$1,275 00	\$680 00		1886. Oct. 16	Art. 8, treaty July 27, 1853, 10 Stats., 1013.	See claim above, S. Armijo, No. 196.
495 00	.....	\$495 00	Nov. 24	Treaty Aug. 24, 1835, 7 Stats., 474.	
850 00	.....	850 00	Nov. 23	Treaty Sept. 29, 1865, 1861, 14 Stats., 687.	
1,350 00	1,100 00	.....	Dec. 4	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1162.	
183 50	125 00	.....	Nov. 23	Art. 1, 2, 4, treaty July 27, 1853, 10 Stats., 1013.	
6,100 00	5,185 00	.....	Dec. 4	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1163.	
3,720 00	1,300 00	.....	Oct. 21	Art. 4, 5, treaty July 27, 1853, 10 Stats., 1013.	
155 00	.....	155 00	Nov. 23	Treaty Sept. 24, 1857, 11 Stats., 729.	
4,720 00	2,600 00	.....	Dec. 17	Treaty July 26, 1825, 7 Stats., 255.	
28 25		28 25	Sept. 9	Treaty Sept. 29, 1865, 14 Stats., 689.	Submits whether injury was committed upon Indian lands, or whether, under the facts, the injury was done upon public lands.
106 50	.....	106 50	Nov. 23	Treaty July 27, 1853, 10 Stats., 1013; treaty Oct. 14, 1865, 14 Stats., 703.	
3,405 00	2,723 00	.....	Nov. 23	Art. 1, treaty of Oct. 10, 1865, 14 Stats., 695.	
6,750 00	.....	6,750 00	Sept. 24	Treaty of Oct. 17, 1855, 11 Stats., 657.	
707 00	640 00	.....	Sept. 22	Art. 4, treaty, of July 27, 1853, 10 Stats., 1053.	
119 55	75 00	.....	Oct. 16	Art. 2, treaty of Oct. 14, 1865, 14 Stats., 703.	
450 00	.....	450 00	Nov. 27	Treaty of July 6, 1825, 7 Stats., 255.	
525 00	.....	525 00	Nov. 23	Treaty of Sept. 9, 1849, 9 Stats., 974.	
950 00	500 00	.....	Dec. 17	Art. 1, treaty of Apr. 29, 1868, 15 Stats., 635.	
200 00	.....	200 00	Oct. 21	Treaty of July 27, 1853, 10 Stats., 1013.	
22,000 00	10,025 00		Nov. 23	Art. 1, treaty of Apr. 29, 1868, 15 Stats., 635; art. 1, treaty of May 10, 1868, 15 Stats., 655.	Cheyenne interest in 10 instalments \$20,000 each, \$200,000 as per treaty, 15 Stats., 596, sec. 10.
327 50		327 50	Oct. 16	Treaty of Oct. 7, 1863, 13 Stats., 674.	Sioux interest in 12 installments, \$130,000 each, \$1,560,000 as per treaty, 15 Stats., 638, sec. 10. No treaty funds.
332 50	.....	332 50	Sept. 17	Treaty of Mch. 2, 1868, 15 Stats., 620.	
3,000 00	1,200 00	.....	Dec. 2	Art. 3, treaty of Sept. 9, 1849, 9 Stats., 974.	
6,500 00	.....	6,500 00	Oct. 19	Treaty of Sept. 9, 1849, 9 Stats., 974.	
8,299 00	5,158 75	.....	Dec. 3	Art. 3, treaty of Sept. 9, 1849, 9 Stats., 974.	
50 00	.....	50 00	Sept. 7	Treaty of Mch. 2, 1868, 15 Stats., 619.	
46 75	.....	46 75	Oct. 20	Treaty of July 27, 1853, 10 Stats., 1813; treaty of Feb. 18, 1861, 12 Stats., 1163.	
200 00	.....	200 00	Nov. 24	Treaty of Nov. 10, 1808, 7 Stats., 107; treaty of Sept., 29, 1865, 14 Stats., 687.	
65 00	.....	65 00	Dec. 1	Treaty of July 1, 1852, 10 Stats., 979.	
200 00	.....	200 00	Nov. 23	Treaty of Nov. 10, 1808, 7 Stats., 107; treaty of Sept. 29, 1865, 14 Stats., 687.	

A list of depredation claims in favor of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
1009	Shaw, A. G., Dakota Ty.....	Cow and steer	Brulé and Ogalalla Sioux.	Oct. 25, '71	Feb. 16, '72
305	Shaw, Geo. M., residence unknown.	Horses	Kiowa	July 8, '60	Apr. 2, '61
606	Shepard, Charles P., Morris County, Kansas.	Clothing, provisions, &c.	Cheyenne.....	June 3, '68	Aug. 21, '68
563	Sherron, Nicholas, residence unknown.	Clothing, &c.	Blackfoot.....	Nov. 12, '65	Mch. 4, '68
1203	Shore, C. C., Sumner County, Kansas.	Horses, &c	Osage.....	June, 1872	Mch. 7, '73
1202	Shore, F. M., Sumner County, Kansas.	Horses, harness, &c.	do	June, 1872	Mch. 7, '73
1079*	Siegenfuhr, August, Leavenworth County, Kansas.	Horses	Cheyenne.....	Nov. 12, '64	Apr. 29, '68
561	Slaughter and Sopris, Colorado.	Horses, mules, &c.	Kiowa	Sept. 30, '60	Mch. 13, '68
1014	Smith, D. A., and Ebens, Atlantic City, Wyo.	Mules, horse, &c .	Sioux	Sept. 28, '69	Feb. 23, '72
580	Smith, James, Wabaunsee County, Kansas.	Horses, mules, &c.	Cheyenne	Oct., 1867	May 21, '68
479	Smith, William, deceased, Colorado.	Horses	Ogalalla Sioux....	May 25, '65	Feb., 1867
932	Stevens, Chas. H. R., Henneferville, Utah.	One horse.....	Ute	June 9, '71	Aug. 18, '71
1098	Stapp, W. B., San Miguel County, New Mexico.	Horses, steers, &c.	Kiowa and Comanche.	June 11, '72	Oct. 10, '72
1306	Stockman, H. H., Gillespie County, Texas.	Horses and mules.	Kiowa.	1861, '62, '64	Mch. 14, '74
1241	Stapleton, R. H., Socorro County, New Mexico.	Cattle	Southern Apache.	Dec. 11, '72	July 19, '73
618*	Sturgill, John F., Morris County, Kansas.	do	Kiowa and Comanche.	July, 1864	Sept. 16, '68
1234	Sullivan, John, Socorro County, New Mexico.	Horses	Mescalero Apache	Feb. 28, '73	June 12, '73
1311	Starr, Samuel B., Kiowa County, Kansas.	Mules, provisions, &c.	Osage.....	Nov. 22, '72	Mch. 16, '74
1711	Stone and Rouse, Gallatin County, Montana.	House, furniture, and goods.	Nez Percé	Sept. 13, '77	Mch. 18, '78
3291	Swope, Mannelito, once Hopkins, Santa Fé, N. Mex	Clothing, jewelry, &c.	Kiowa and Comanche.	June, 1872	July 8, '84
2476	Tenerio, José, Bernalillo County, New Mexico.	Horse.....	Navajo	Dec., 1853	Dec. 24, '54
599	Tedstone, Thomas, Morris County, Kansas.	Clothing, &c.....	Cheyenne.....	June 3, '68	Aug. 8, '68
1167	Trotter, Capt. F. E., United States Army.	Cows	do	Oct., 1872	Feb. 15, '73
1135*	Uhlig, Johanna, Lincoln County, Nebraska.	Dwelling, furniture, &c.	Cheyenne, Arapaho and Sioux.	Aug. 6, '64	Dec. 15, '72
928	Valdez & Abrew, San Miguel County, New Mexico.	Mules, &c	Apache.....	Nov. 2, '70	July 17, '71
1153	Van Pelt, Thomas, Curry County, Oregon.	Dwelling, &c	Rogue River.....	May and July, 1856	July 14, '73
1278	Walker, Edward L., Buchanan County, Texas.	Horses.....	Comanche	Aug., 1873	Dec. 10, '73
1240	Walrond, Zachary T., Osborne County, Kansas.	Cattle	Arapaho.....	July 2, '70	June 25, '73
862	Walsh, Capt. J. W., Tenth United States Cavalry.	Pony	Kiowa and Comanche.	Oct. 23, '69	Jan. 3, '71
565	Ward, Seth, Cheyenne, Dak.	Mules, horses.....	Sioux	May 24, '67	Mar. 16, '68
713	Warren, B. W., Monona County, Iowa.	Horses.....	Sisseton Sioux....	June 12, '61	July 28, '69
1466*	Watrous, Samuel B., Mora County, New Mexico.	Horses, mules, &c	Mescalero Apache	Oct., 1861	Dec. 17, '74
285	do	Mules, oxen, &c ..	Comanche	Mar., 1858	Dec. 3, '58
646	Weaver, Thos. F., Labette County, Kansas.	Pony	Osage.....	June 5, '67	Oct. 5, '68
533	Webster, Thos. L., Saline County, Kansas.	Horses, &c.....	Kaw.....	June, 1866	Dec. 11, '67

* Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
\$110 00	-----	\$110 00	1886. Oct. 21	Treaty Oct. 28, 1865, 14 Stats., 747.	
150 00	-----	150 00	Oct. 16	Treaty July 27, 1853, 10 Stats., 1013.	
928 50	\$223 00	-----	Nov. 23	Art. 1, treaty May 10, 1868, 15 Stats., 655.	See claim above, S. Armijo, No. 196.
206 00	-----	206 00	Nov. 24	Treaty Oct. 17, 1855, 11 Stats., 657.	
214 45	64 45	-----	Sept. 17	Art. 9, treaty Nov. 10, 1808, 7 Stats., 107.	See claim above, W. H. Baker, No. 645.
397 00	150 50	-----	Sept. 13	Art. 9, Revised treaty, p. 573.	Do.
480 00	300 00	-----	Dec. 2	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1163.	
3,500 00	-----	3,500 00	Nov. 27	Treaty July 27, 1853, 10 Stats., 1013.	
1,850 00	900 00	-----	Dec. 14	Art. 1, treaty Apr. 29, 1868, 15 Stats., 635.	See claim above, M. Mousseau, No. 595.
682 00	550 00	-----	Oct. 16	Art. 2, treaty Oct. 14, 1865, 14 Stats., 703.	See claim above, S. Armijo, No. 196.
300 00	240 00	-----	Dec. 2	Art. 1, 5, treaty July 5, 1825, 7 Stats., 252.	See claim above, M. Mousseau, No. 595.
200 00	-----	200 00	Sept. 14	Treaty Mch. 2, 1868, 15 Stats., 619.	
4,090 00	2,595 00	-----	Dec. 4	Art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	See claim above, M. Montoya, No. 698.
12,458 00	-----	12,458 00	Oct. 16	Treaty July 27, 1853, 10 Stats., 1013.	
200 00	-----	200 00	Dec. 1	Treaty July 1, 1852, 10 Stats., 979.	
200 00	90 00	-----	Oct. 16	Art. 4, 8, treaty July 27, 1853, 10 Stats., 1013.	
220 00	150 00	-----	Dec. 2	Art. 1, 2, 3, treaty July 1, 1852, 10 Stats., 979.	No treaty funds.
1,500 00	-----	1,500 00	Dec. 28	Treaty Jan. 21, 1867, 14 Stats., 687.	
15,987 85	3,345 00	-----	Dec. 21	Art. 8, treaty Apr. 29, 12 Stats., 957.	No treaty fund.
25,000 00	816 00	-----	Dec. 8	Art. 1, treaty Aug. 28, 1868, 15 Stats., 581.	Submits whether she should receive compensation for violence and indignities to her person.
100 00	-----	100 00	Nov. 24	Treaty Sept. 9, 1849, 9 Stats., 974.	
258 25	200 00	-----	Dec. 3	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1163.	See claim S. Armijo, No. 196.
205 00	-----	205 00	Sept. 9	Treaty Oct. 28, 1867, 15 Stats., 593.	
9,832 00	4,961 00	-----	Oct. 16	Art. 1, treaty May 10, 1868, 15 Stats., 655.	
				Art. 1, treaty Apr. 29, 1868, 15 Stats., 635.	
12,000 00	6,450 00	-----	Dec. 3	Art. 1, treaty July 1, 1852, 10 Stats., 979.	See claim above, M. Montoya, No. 698.
1,800 00	-----	1,800 00	Oct. 16	Treaty Sept. 10, 1853, 10 Stats., 1018.	
500 00	-----	500 00	Sept. 17	Treaty Oct. 21, 1867, 15 Stats., 581.	
150 00	100 00	-----	Sept. 14	Art. 1, treaty Oct. 28, 1867, 15 Stats., 593.	Interest in 10 instalments, \$20,000 each, \$200,000, as per treaty. 15 Stats., 596, sec. 10.
50 00	50 00	-----	Dec. 3	Art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	See claim above, M. Montoya, No. 698.
9,000 00	3,550 00	-----	Oct. 16	Art. 1, treaty Oct. 28, 1865, 14 Stats., 747.	See claim above, M. A. Mousseau No. 595.
400 00	-----	400 00	Oct. 19	Treaty June 19, 1858, 12 Stats., 1039.	
5,875 00	3,375 00	-----	Oct. 20	Art. 1, 5, treaty July 1, 1852, 10 Stats., 979.	
5,745 00	3,002 00	-----	Oct. 20	Art. 4, 5, treaty July 27, 1853, 10 Stats., 1013.	See claim above, M. Montoya, No. 698.
100 00	-----	100 00	Nov. 23	Treaty Sept. 29, 1865, 14 Stats., 687.	
390 00	-----	390 00	Oct. 16	Treaty Mar. 13, 1862, 12 Stats., 1221.	

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredation.	When committed.	When filed.
1149	Westbrook, Catherine, Del Norte County, California.	House, furniture, &c.	Rogue River.....	1856	Jan. 14, '73
290	Weston, J. B., Fort Phil Kearny, Dakota.	Wagons, &c	Crow	1867	Oct. 30, '67
62	Whitcomb, Arteus, Ponca, Nebr.	Mill burned.....	Yankton Sioux ...	Dec. 28, '57	Apr. 4, '63
812	Whittaker, C. W., Morris County, Kansas.	Horses	Osage.....	1868	Sept. 21, '70
1668*	Wiggins, Oliver P., Denver, Colo.	Oxen, cows, &c ...	Cheyenne and Ogalalla Sioux.	Dec. 5, '65	Feb. 17, '73
887	Wilke, N. O., Jewell County, Kansas.	Money, clothing, &c.	Cheyenne.....	May 23, '69	Mar. 1, '72
2834	Williams, W. G., Indian Territory.	Cattle	Kiowa, Comanche, and Apache.	Nov. 18, '78	June 3, '82
679	Winner, Isaac, Marion County, Kansas.	Horses.....	Keechie	Sept., 1867	Apr. 26, '69
1163	Wood, A. N. (dec'd), Wise County, Texas.	Horses, &c	K i o w a and Comanche.	June 12, '72	Feb. 17, '73
889	Wright, Robert M., Fort Dodge, Kans.	Horses, mules, &c.	Cheyenne.....	June 9, '70	Feb. 3, '71
1274	Welborn, W. J., Tarrant County, Texas.	Horses.....	Kiowa	July 13, '72	Dec. 28, '72
799	Yrisani, Manuel, Bernalillo County, New Mexico.	Mules, &c	Kiowa and Cheyenne.	Sept. 9, '67	May 23, '70

* Barred.

against Indians in treaty with the Government, &c.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing or to be derived from treaty or other obligation, for payment of same.
\$950 00	.....	\$950 00	1886. Oct. 16	Treaty of Nov. 15, 1854, 10 Stats., 1119.	
600 00	.....	600 00	Sept. 28	Revised treaties, 325.	
23,000 00	.....	23,000 00	Dec. 2	Treaty Oct. 21, 1837, 7 Stats., 542; treaty of April 19, 1858, 11 Stats., 743.	
425 00	.....	425 00	Nov. 23	Treaty Nov. 10, 1808, 7 Stats., 107.	
4,850 00	\$4,590 00	.....	Sept. 22	Art. 2, treaty Feb. 18, 1861, 12 Stats., 1163; Art. 1, treaty July 5, 1825, 7 Stats., 252.	
226 56	100 00	.....	Sept. 2	Art. 1, treaty May 10, 1868, 15 Stats., 655.	See claim above, S. Armijo, No. 196
5,064 00	.....	5,064 00	Nov. 23	Treaty July 27, 1853, 10 Stats., 1013.	
200 00	.....	200 00	Sept. 2	Treaty March 8, 1847, 9 Stats., 845.	
225 00	165 00	.....	Nov. 23	Art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	See claim above, M. Montoya, No. 698.
1,546 66	600 00	.....	Nov. 27	Art. 1, treaty Oct. 28, 1867, 15 Stats., 593.	See claim above, S. Armijo, No. 196.
225 00	225 00	.....	Dec. 29	Art. 1, treaty Oct. 21, 1867, 15 Stats., 581.	See claim above, M. Montoya, No. 698.
6,600 00	.....	6,600 00	Sept. 13	Treaty Oct. 28, 1867, 15 Stats., 593; treaty Oct. 21, 1867, 15 Stats., 581.	

H. Ex. 77—3

Report of the Committee on the Progress of the Work of the Class

Name of the Member	Date of Birth	Date of Admission	Date of Graduation
Miss Mary Ann Smith	Jan. 15, 1845	Jan. 15, 1865	Jan. 15, 1885
Miss Sarah Jane Jones	Feb. 20, 1846	Feb. 20, 1866	Feb. 20, 1886
Miss Elizabeth Ann White	Mar. 10, 1847	Mar. 10, 1867	Mar. 10, 1887
Miss Mary Jane Brown	Apr. 5, 1848	Apr. 5, 1868	Apr. 5, 1888
Miss Anna Maria Green	May 15, 1849	May 15, 1869	May 15, 1889
Miss Mary Ann Black	Jun. 1, 1850	Jun. 1, 1870	Jun. 1, 1890
Miss Sarah Jane Grey	Jul. 10, 1851	Jul. 10, 1871	Jul. 10, 1891
Miss Elizabeth Ann Hall	Aug. 20, 1852	Aug. 20, 1872	Aug. 20, 1892
Miss Mary Jane King	Sep. 5, 1853	Sep. 5, 1873	Sep. 5, 1893
Miss Anna Maria Lee	Oct. 15, 1854	Oct. 15, 1874	Oct. 15, 1894
Miss Mary Ann Clark	Nov. 1, 1855	Nov. 1, 1875	Nov. 1, 1895
Miss Sarah Jane Adams	Dec. 10, 1856	Dec. 10, 1876	Dec. 10, 1896

1897-1898

AMERICAN FISHERIES.

REPLY

OF THE

SECRETARY OF THE TREASURY

TO THE

RESOLUTION OF THE HOUSE OF REPRESENTATIVES OF DECEMBER
14, 1886, CALLING FOR AN INTERPRETATION OF THE
TARIFF LAW RESPECTING THE DUTIES ON FISH.

JANUARY 10, 1887.—Referred to the Committee on Foreign Affairs
and ordered to be printed.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

H. Ex. 20—80 1887.

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REPLY OF THE SECRETARY OF THE TREASURY.

TREASURY DEPARTMENT, *January 10, 1887.*

SIR: I have had the honor to receive the resolution of the House of the 14th ultimo, making inquiry in regard to the “interpretation now “given by the Treasury Department to the tariff law of eighteen hundred and eighty-three, which in one section declares that ‘fish, fresh, “for immediate consumption,’ shall be free of tax on arrival at our “seaports or lake ports, and in another section declares that ‘foreign- “caught fish, imported fresh,’ shall be taxed at the rate of fifty cents “for each hundred pounds,” and also requesting me “to transmit to “the House copies of all official correspondence, opinions, and decisions “bearing on the subject, together with a statement of the duties collected “each year, since eighteen hundred and sixty-five, on the several descriptions of fish caught on the lakes, or the Canadian tributaries “thereof, and also on the several descriptions caught in the North “Atlantic, or on the shores of the islands thereof.”

FROZEN FISH.

A satisfactory reply to these inquiries will make necessary a preliminary statement, and an exhibition of certain details connected therewith.

By the tariff law of 1846, there was levied 20 per cent. ad valorem, on the foreign value of:

“Fish, foreign, whether *fresh*, smoked, salted, dried, or pickled, not otherwise provided for.”

The same schedule, and language, were preserved in the tariff law of 1857, but the rate was reduced to 15 per cent.

The tariff law of March 2, 1861, levied in the tenth section the following rates:

“On mackerel, two dollars per barrel; on herrings, pickled or salted, one dollar per barrel; on pickled salmon, three dollars per barrel; on all other fish, pickled, in barrels, one dollar and fifty cents per barrel; on all other *foreign*-caught fish, imported otherwise than in barrels or half-barrels, or whether fresh, smoked or dried, salted or pickled, not otherwise provided for, fifty cents per one hundred pounds.”

In its twenty-third section that law declared that “*fish, fresh caught, for daily consumption*,” shall be exempt from duty.

Then began a perplexity which has embarrassed this Department up to the present day. Some one at the port of entry must, under

that clause, decide whether or not the fish, entered as free thereunder, is "fresh caught," and is "for daily consumption." Did the qualification "for daily consumption" refer to the "fish," or to the catching, and the purpose of the catching? Who can correctly pass judgment on the *motive* of the fishermen, or of the importer?

On June 18, 1866, this Department decided (see Appendix A) that the phrase included *all* fish imported for consumption, *while fresh*, and did not include fish imported fresh, but to be afterwards dried, or pickled, or cured for future use. "Daily consumption," said this Department, twenty years ago, means consumption "within a short time." That view seems correct, but, nevertheless, the law was intrinsically incapable of exact execution, inasmuch as it might be difficult for a customs officer to foresee, or foreknow, the intentions, or purposes referred to.

I believe that the fish clause quoted above from the law of March 2, 1861, and which levied a tax on fish, stood till 1870, but the free clause was made in 1870 to read :

"*Fish, fresh, for immediate consumption.*"

The substitution of "immediate" for "daily" did not remove the perplexity.

The Tariff Commission did not report on the subject.

The tariff law of 1883 taxes fish at our seaports, our lake ports, and on the frontier, by these words in the schedule for "*Provisions*:"

"Mackerel, one cent per pound.

"Herrings, pickled or salted, one-half of one cent per pound.

"Salmon, pickled, one cent per pound; other fish, pickled, in barrels, one cent per pound.

"Foreign-caught fish, imported otherwise than in barrels or half-barrels, whether *fresh*, smoked, dried, salted, or pickled, not specially enumerated or provided for in this act, fifty cents per hundred pounds."

A subsequent section declared that the following articles, when imported, shall be exempt from duty :

"Fish, fresh, for immediate consumption."

"Fish for bait."

"Oil, spermaceti, whale and other fish oils of American fisheries, and all other articles the produce of such fisheries."

"Shrimps or other shell-fish."

"Fish-sounds, or fish-bladders."

The kinds of fish just described, having been "specially enumerated, or provided for" in 1883, were thereby taken out of the clause levying a tax on *foreign-caught* fresh fish.

What has happened in the execution of the free-fish clause, during the last quarter of a century, whether the clause required "*daily*" or "*immediate*" consumption, is exhibited in the subjoined Appendix A.

It is an unsatisfactory record of an effort to discover and execute an intention of the law-makers which was so ambiguously expressed as to lead to doubt and dispute. In 1877, and after the law of 1870, the difficulties were increased, partly by reason of new contrivances for the artificial freezing of fish.

At first it was doubted by collectors whether or not a fish caught in winter, thrown on the ice and frozen stiff while lying there, and imported in that condition, could be a "fresh fish," as if either a fresh fish cannot be frozen, or a frozen fish cannot be fresh. It was also insisted that a fish caught in summer, and frozen by an artificial method could not be deemed fresh, even though as fresh as one frozen by the natural coldness of winter air in a northern climate. Then it was said that the produce of American fisheries could not be carried into Canada, there artificially frozen, and afterwards be exempt from tax when entered at our ports. It was argued by customs officers that the quantity entered could be made a safe test of "*immediate* consumption," as if customs officers could correctly ascertain and decide on the "immediate" buying and consuming powers of the people. There were customs officers who urged the Department to make the distance of the probable place of sale from the place of entry a test of "immediate consumption," as if transportation from Portland in Maine to a market at Boston could be a legal test, and "immediate" referred to place rather than time. One collector thought twenty tons of fish on one entry at a port on the lakes, could not be for "immediate consumption" by subsequent shipment and sale in the great markets of Chicago, Philadelphia, and New York. It could not be affirmed that the fish thus frozen, whether naturally or artificially, was either "smoked, or dried, or salted, or pickled." If freezing deprived the fish of freshness, it could not well be dutiable as "foreign-caught fish, *fresh!*" What sort of fish was it? Was it old, stale, and decayed fish that buyers and consumers sought, bought, and would eat? The contention has gone on for well-nigh a quarter of a century, nor has Congress intervened to tax frozen fish by other and explicit words!

In June last the interpretation of the law was referred to the Solicitor of this Department. His opinion, subjoined in Appendix A, p. 32, does not relieve the enactment from difficulties in uniform application at each port such as the Constitution commands. If a collector shall, in order to secure such uniformity at every port, await the decision of this Department after an exhibition of the facts surrounding each entry, the fish might become anything but "fresh."

This fish clause of the tariff law affords a pertinent illustration of the need there is of revising our taxing legislation. The draughtsman of a great many of its sections, apparently unable to set down clearly his purpose, and his own idea of the method of executing it, has thrown upon appraising or collecting officers the work of ascertaining the intentions of importers, or the uses to which merchandise can be, or may be, thereafter put, which those officers are unable to perform in any reasonable time, or in any satisfactory way. To appraising and collecting work in practical administration there is a limit, which our present law too frequently ignores, and then customs officers are unjustly criticised, or condemned, for not doing such work properly.

I have dwelt upon this incident in our tariff legislation because it makes clear, even to the superficial observer, how man's inventions, and improved methods of rapid communication by steam, not only crowd down prices, and extend the saleable area of one article after another, year by year, and month by month, but even modify the necessary interpretation to be given to classifications in our taxing laws. One hundred and three years ago,—when the Treaty of Peace was signed which apportioned the British empire in America and its rights of fishing, between the British Government and the thirteen independent American States,—railways and steam-engines were practically unknown, and the use of ice as now applied in the fishing industry was also unknown. Even half a century ago the purchase and enjoyment of fresh fish as food were confined to places near the spot where the fish were caught. Thus it has come to pass that ice and railways have changed, even since 1870, the most obvious definition and the strictly literal application of the phrase in our tariff law, “fish, fresh, for *immediate* consumption.” Such causes of change are constantly occurring as to other articles, by reason of modifications in methods of production, new combinations of component materials, new nomenclature, and new commercial classifications, which enforce the need of frequent revisions of our tariff law, when that law, instead of taxing simply a few articles, requires the executive to levy and collect multifarious duties on so many hundreds and even thousands of articles.

The United States Commissioner of Fish and Fisheries says in his report for 1881:

“In the earlier years of the American fisheries, and in the greater abundance of inshore fisheries, with a comparatively slight demand in consequence of the small population of the country, and the difficulties of transporting the fish, it was quite possible to obtain, within easy reach of our coast, fish enough to meet all the requirements. Now, with a population of fifty millions of people, the great decline of the inshore fisheries, and the ability not only to transport fresh fish to any

distance inland without deterioration, but with also the growing demand for salted, dried, and canned fish, it is of the utmost importance that every facility be furnished to the fishermen in the prosecution of their business."

In the report of the Commissioner for 1882 it is said :

"The work of increasing the supply of valuable fishes in the waters of the United States, whether by artificial propagation or by transplantation, although very successful, may be considered as yet in its infancy. It must be remembered that the agencies which have tended to diminish the abundance of the fish have been at work for many years, and are increasing in an enormous ratio. This, taken in connection with the rapid multiplication of the population of the United States, makes the work an extremely difficult one. If the general conditions remained the same as they were fifty years ago, it would be a very simple thing to restore the former equilibrium.

"At that time, it must be remembered, the methods of preservation and of wholesale transfer, by means of ice, were not known, while the means of quick transportation were very limited. Hence, a small number of fish supplied fully the demand, with the exception, of course, of species that were salted down, like the cod, the mackerel, and the herrings, (including the shad.) At that time a comparatively small quantity supplied the demand for fresh fish, and it was easy to more than meet the demand. Now, however, the conditions are entirely changed."

In Appendix A will be found "the official correspondence, opinions and decisions," on the subject of frozen fish, the record of which will disclose to your honorable body the vast amount of labor which even one ambiguous phrase in a tariff law throws upon your Treasury Department and its customs officers. Our existing drag-net war-tariff law contains not one only, but hundreds of such phrases, and these are the least of its discreditable, scandalous, and easily remediable imperfections.

THE PRODUCTS OF AMERICAN FISHERIES EXEMPT FROM DUTY.

The clause, already quoted from the law of 1883, which exempts from seaport taxation all fish-oils of American fisheries, and "all other articles the produce of such fisheries," has a large bearing on the inquiry made of me by the House. That exemption stands in the law of 1883, as it stood in the Revised Statutes, excepting the immaterial addition in the former of the word "oils" after "fish." The enactment is in the law of March 2, 1861, which law secured the freedom of such articles from tariff taxes down to the Revised Statutes. The tariff laws of 1857, and 1846, contain the clause of 1861. The law of 1841 declares that "whale and other fish oils of American fisheries, and all other articles the produce of said fisheries," shall be exempt from duty. Before 1841 the clause does not appear in the statutes, and yet a manual issued in New York by Deputy Collector Lyon in 1828, and another in

1832, put down as free; "Fisheries of the United States and their territories,—all products."

I also find substantially the same language in two compilations of the tariff laws—one by Meyer Moses in 1830, and one by E. D. Ogden in 1840; and still another compilation, in 1828, by "James Campbell, entry clerk, custom-house, New York," in which he enumerates "fish of the fisheries of the United States or its Territories, free." Mr. Ogden was for many years chief entry clerk at the port of New York, and a compiler of the revenue laws. In his edition for 1840 he cites as authority for the phrase the acts of July 14, 1832, 1840, and 1841. The explanation is probably this: The final clause of the first section of act of August 10, 1790, levies duties on a plan unlike that now used. It taxes at five per cent. *ad valorem* certain classes of merchandise, and then rescues from taxation certain specified commodities, "and, generally, all articles of the growth, the *product*, or manufactures of the *United States*." The two sentences next to the last in the first section of the law of April 27, 1816, impose duties "on spermaceti oil of *foreign* fishing, (and) on whale and other fish oil of *foreign* fishing." The language in that law, as to the products named, is precisely the same as that used in the present tariff, with the single substitution in the latter "of *American* fisheries" for the words "of *foreign* fishing" in the former. My conclusion is that only the products of *foreign* fishing having been provided for as dutiable, the products of American fisheries were by a clear implication exempted from duty as the products of the United States. That they were the products of the United States is, it seems to me, put beyond question by the fact that bounties were paid to vessels engaged in American fisheries.

In 1836, it was decided by Mr. Justice Story that when whales have been caught, and oil has been therefrom produced, by the crew of an American vessel, the oil is not the product of "foreign fishing" and dutiable, even although owned by aliens when entered at our ports. He said that the inquiry whether or not the oil was of "foreign fishing" depended upon the nationality of the vessel when the whales were caught and the oil extracted, and not upon any subsequent events.

In a series of comparatively recent decisions by this Department, copies of the text of which will be found in Appendix B, Fisheries have been defined as "*American*" within the meaning of our revenue laws, although the taking of the fish be on the high seas, or within a foreign jurisdiction. That should in part be so for other reasons than were assigned in those decisions, inasmuch as customs duties are, in general, only imposed on articles when imported from a port, or place, within the exclusive dominion of a foreign State, which could not be

said of fish, or their products, arriving from the ocean where the fish were caught.

The phrase "fisheries of the United States," is in the first tariff law enacted by the first Congress which sat under the Constitution, and the test of American fishing has, from that day to this, uniformly been the nationality of the vessel, regardless of the place where the fish were taken. Even the Treaty of Washington, which admitted free of duty into each country fish of all kinds the produce of the fisheries of either country, excepting fish of the inland lakes, and of the rivers falling into them, left fish caught therein by American vessels entitled to free entry in our ports as formerly. Our Supreme Court declared in 1876, that, subject to the paramount right of navigation, (the power to regulate which is in the Federal Government,) each State owns the bed of the tide-waters within its jurisdiction, and may appropriate them to be used exclusively by its citizens as a common for cultivating and taking fish if navigation be not impeded ; but the Treaty of 1854 gave, nevertheless, to British subjects, in common with American citizens, the liberty to fish on our coasts north of the 36th parallel of north latitude, and the Treaty of 1871 gave the liberty north of the 39th parallel. Those treaties having fallen, and the fishing rights of Massachusetts on her coasts having returned to her, she may permit British vessels to fish on her coasts, but then it could not be said that the fish, if entered at our ports, had been imported from a foreign port. But apart from such an improbable incident to complicate the proposition, it may be safely affirmed that all fishing-grounds, whether on the high seas, or on the Canadian coasts secured to us by treaty stipulations, are "American Fisheries" if the fish are caught by vessels regularly documented by the Treasury Department. In that sense and to that end, the ocean and certain Canadian coasts are (under the treaties of 1783 and 1818) *our* "fishing-grounds."

WHAT VESSELS ARE AMERICAN VESSELS?

In this relation,—which concerns the freedom from taxation at our ports of fish products taken in the sea, or on Canadian coasts, and also concerns our pending serious differences with the British Government,—it is important to realize what constitutes an American vessel thus capable of enlarging the area from which free fish can be entered at our ports. Congress, notably by the enactment of July 5, 1884, has committed to the Head of this Department the supervision of the commercial marine, and merchant seamen of the United States, and of the decision of all questions relating to the issue of registers, enrolments, and licenses of vessels, and to the preservation of those documents.

Whether or not a private vessel, claiming to be American, is American, and entitled to carry and display that flag, depends solely on the character of the ship's papers that it carries by the permission of Congress, given under the attestation of this Department. The only question is this: Has the vessel conformed to the laws, not of a foreign country, but of the United States? In the decision of that question her papers must be *prima facie* evidence against all the world. These considerations are elementary, but they are important now as defining what are "American fisheries," whose products are in our ports exempt from customs taxes.

The section of our law which authorizes a vessel, licensed for carrying on fishery, to "touch and trade at any foreign port" is not a modern contrivance for modern exigencies, as Canadian local officials intimate, but has been on our statute-book since 1793. As literally reproduced in section 4364 of the Revised Statutes, it gives the permission of this Department to any vessel, so licensed for carrying on the fisheries of the United States, to enter British or other foreign ports, as a commercial vessel, and to there enjoy the rights and privileges accorded to vessels of the United States sailing "foreign" under a register, and not engaged in the fisheries. The permission thus given to fishing vessels to "touch and trade" has been understood by this Department for nearly a hundred years as conferring upon the vessel a right to land, and to receive on board a cargo of merchandise, in the same manner as if she were not engaged in the fisheries. On the return of the vessel to the United States, she is required to make regular entry, and to be in all respects subject to the regulations prescribed for vessels arriving from foreign ports.

MEDLÆVAL RESTRICTIONS ON FREE NAVIGATION.

The stipulations of the Treaty of 1815 only applied in our favor to British territories "*in Europe.*" If they were applicable now to British territories *in America* the present differences in British North America should not exist, for the first article of that convention declares that "the inhabitants of the two countries, respectively, shall have liberty, freely and securely, to come *with their ships* and cargoes to all such places, ports, and rivers, in the territories aforesaid, to which other foreigners are permitted to come, to enter into the same, and to remain and reside in any parts of the said territories, respectively."

The second article stipulates that, as to "the intercourse" between the United States and British possessions in *North America*, "each party shall remain in the complete possession of its rights."

In 1827, when the treaty of 1815 was extended for an indefinite time, the United States struggled in vain with England for a more liberal agreement, or a more liberal interpretation of that of 1815, but could obtain neither.

Such liberty of access by American vessels to British colonial ports on this continent was the subject of fruitless negotiation by each of the first six Presidents. The endeavor was continued during forty years, and was only successful in the hands of General Jackson, as President, Mr. Van Buren as Secretary of State, and Mr. McLane as Minister to London, and then by concerted legislation relating at first only to the British West Indies. It having been arranged that there would be legislation at London opening to us the British colonial ports to the *south* of us on this continent, Congress, on May 29, 1830, authorized President Jackson to proclaim our ports open "indefinitely, or for a fixed term," to British vessels from the islands, provinces, or colonies of Great Britain, on or near the North American continent," and *north*, south, or east of the United States.

Soon thereafter, and on October 5, 1830, President Jackson did issue the Proclamation, and on June 26, 1884, Congress again reduced tonnage dues on Canadian vessels of all sorts entering our ports. By such concerted and reciprocal legislation, the mediæval barriers around colonial possessions in America by which the mother country had so long endeavored for her own benefit to hamper and restrict the trade of the colonies, and to levy differential duties in favor of colonial produce, have been broken down. The Privy Council, and the Governor-General of the Dominion of Canada, while conceding that Canadian ports are now open to American trading vessels, attempt to apply that mediæval and discarded restrictive system to American fishermen on the high seas.

In 1845, after many years of effort by the United States, England again relaxed the rigor of the restrictions of her ancient laws of transportation, as applied to her colonies, and the two countries entered upon a new period of prosperity flowing from the unhindered carriage of merchandise in bond by land and water. That legislation covering the British North American provinces began, on our part, on March 3, 1845. In 1846 came the comprehensive system of warehousing, the general features of which are now in force, devised and perfected, during the administration of President Polk, by my distinguished predecessor, Mr. Robert J. Walker. In 1849, 1850, 1854, and subsequently, that system of warehousing, and transportation in bond by railway and steamboat, has been amended and improved so that to-day we of the United States and they of the Dominion of Canada are reaping the advantages of an international organization by which mer-

chandise, whether dutiable or free, and if dutiable without payment of duties in transit, can if entered at one of our ports proceed immediately over our territory to Canada, or, if landed at a Canadian port, can come freely to its destination in the United States, or can pass from one of our own ports to another over Canadian soil, and, in like manner, from one Canadian port to another over American soil. It is to be regretted that the British North American provinces impede and impair the full fruition of this beneficent system of international intercourse and transportation by unworthy and petty spite in their ports against American deep-sea fishermen.

From 1821 to 1832, the aggregate annual traffic between the United States and the British North American provinces averaged only \$3,257,153; from 1832 to 1845 it rose to \$6,313,780, but, under liberal transportation arrangements, it rose from 1846 to 1853 to no less an annual average than \$14,230,763, leaving in our favor, during that period of eight years, a balance of trade of over 40½ millions of dollars.

It was in 1845 that England, changing her colonial policy, empowered the Canadian provinces to make a tariff on imports to suit themselves. During the next year those provinces removed the barrier against American products which existed, in the form of differential rates in favor of British products, and admitted commodities from our side of the line on the same terms as commodities were admitted coming from British ports. In 1849, England, having by her Minister at Washington previously communicated with the Treasury Department, presented a further proposition for a further reciprocal relaxation of commercial restrictions which impeded trade across the boundary line. The administration of President Fillmore endeavored to promote the object for which my predecessor in this Department, Mr. Robert J. Walker, strove, in 1846, in his correspondence with the British Minister.

This good result of only a partial experiment of reciprocal comity naturally led to negotiations for a more comprehensive international arrangement, and such a one was concluded in 1854 by negotiations conducted at Washington, on our side during the administration of President Pierce by a wise and illustrious statesman and citizen of New York, Mr. Marcy, who was then Secretary of State. That reciprocity treaty was in force till 1866, a period covering our civil war. Under its influence, the aggregate interchange of commodities between ourselves and the inhabitants of all the British provinces,—numbering not as many as those of the State of New York,—rose from an annual average of a little over 14 millions of dollars, in the previous eight years to over 33½ millions in gold in 1855, to nearly 50 millions

in 1856, and to 84 millions in the last year of its existence. During the thirteen years the British provinces, according to their official returns, purchased from us articles valued at over 359½ millions of dollars in gold, and we bought from them 197 millions, thus making an international traffic of nearly 556½ millions of dollars on a gold valuation. I can but think that if that treaty of 1854 had remained in force till this day, the two peoples,—divided by a boundary-line which can only with difficulty be discerned from the Arctic ocean to the Pacific, from the Pacific to Lake Superior, and from Lake Ontario to the Atlantic,—would now be one people, at least for all purposes of production, trade, and business.

During the past summer, while American vessels, regularly documented, have been excluded from the hospitality and privileges of trading in Canadian ports, Canadian fishing-vessels have been permitted freely to enter and use American ports along the New England coast, have been protected by this Department in such entry and use, and have not been required to pay any other fees, charges, taxes, or dues than have been imposed upon the vessels of other governments similarly situated. The hospitality elsewhere, and generally extended in British ports to American commercial vessels has not been less, in quality or quantity, as I am informed, than the hospitality extended to British vessels in American ports; but there is this marked difference, that, while this Department protects Canadian fishermen in the use of American ports, the Dominion of Canada brutally excludes American fishermen from Canadian ports. This dependence of port hospitality, as between this Government and the British Government, in respect to vessels of either, is emphasized by the seventeenth section of the law of June 19, 1886, empowering the President to suspend commercial privileges to the vessels of any country denying the same to United States vessels. That section is in harmony with a section in the British navigation law which authorizes the Queen, whenever British vessels are subject in any foreign country to prohibitions or restrictions, to impose by order in council such prohibitions, or restrictions upon the ships of such foreign country, either as to voyages in which they may engage, or as to the articles which they may import into, or export from, any British possession in any part of the world, so as to place the ships of such country on as nearly as possible the same footing in British ports as that on which British ships are placed in ports of such country.

REVENUE LAWS AND REGULATIONS.

The Head of this Department, having the responsibility of enforcing the collection of duties upon such a vast number of imported arti-

cles, under circumstances of so long a sea-coast and frontier line to be guarded against the devices of smugglers, should not be inclined to underestimate the solicitude of the local officers of the Dominion of Canada to protect its own revenue from similar invasion. The laws for the collection of duties on imports, in force in the United States and in the Dominion of Canada, respectively, will be found, on comparison, to be on many points similar in their objects and methods. They should naturally be similar, for both had, in the beginning, the same common origin. In the United States, Congress has divided the territory of each State by metes and bounds, usually by towns, cities, or counties, into collection districts, for the purpose of collecting duties on imports, and in each collection district has established a port of entry and ports of delivery. In that manner all our sea-coast frontier is subdivided for revenue purposes. The object of our law is to place every vessel arriving from a foreign port in the custody of a customs officer immediately upon her arrival, in order that no merchandise may be unladen therefrom without the knowledge of the Government. The Canadian law is much the same as our own in that regard, and in comparison with our own does not seem to me to be unnecessarily severe in its general provisions. Our own law provides, for example, (sec. 2774, Rev. Stat.,) that—

“Within twenty-four hours after the arrival of any vessel, from any foreign port, at any port of the United States established by law, at which an officer of the customs resides, or within any harbor, inlet, or creek thereof, if the hours of the business of the office of the chief officer of customs will permit, or as soon thereafter as such hours will permit, the master shall report to such officer, and make report to the chief officer, of the arrival of the vessel; and he shall within forty-eight hours after such arrival make a further report in writing to the collector of the district, which report shall be in the form, and shall contain all the particulars required to be inserted in and verified like the manifest. Every master who shall neglect or omit to make either of such reports or declaration, or to verify any such declarations as required, or shall not fully comply with the true intent and meaning of this section, shall, for each offence be liable to a penalty of one thousand dollars.”

Condemnation does not, in the opinion of this Department, justly rest upon the Dominion of Canada because she has upon her statute-books and enforces a law similar to the foregoing, but because she refuses to permit American deep-sea fishing vessels, navigating and using the ocean, to enter her ports for the ordinary purposes of trade and commerce, even though they have never attempted to fish within the territorial limits of Canada, and intend obedience to every requirement of the customs laws, and of every other law of the port which such vessels seek to enter. American fishing-vessels duly authenticated by this Department, and having a permit “to touch and trade,” should be permitted to visit Canadian ports, and buy supplies, and en-

joy ordinary commercial privileges, unless such a right is withheld in our ports from Canadian vessels. That right is denied by the Privy Council and the Governor-General of the Canadian Dominion, upon the ground that it would be in effect a *pro tanto* abrogation of the treaty of 1818. That contention is an error, in the opinion of this Department, because the Treaty of 1818 has no application to the subject-matter. If the right claimed by this Department for American vessels authenticated by this Department were conceded by Canada, it would only apply to a few ports established by law for the entry of foreign vessels, and would merely enable United States fishing-vessels to pursue their regular business after entry into or departure from such ports, under the same rules and regulations as are applied to the commercial vessels of other nations. We ask that American fishing-vessels shall enjoy hospitality in such Canadian ports as are set apart for the entry of foreign vessels, for the unloading and shipment of merchandise, and generally for foreign commerce.

This Department has had occasion in the past, and may be compelled in the future, to seize and prosecute to forfeiture foreign as well as domestic vessels violating, in our own ports, the customs law, but I believe there never has been in the past, and I hope there never will be in the future, such passionate spite displayed by the officers of this Government, as has during the last summer been exhibited in the Dominion of Canada toward well-meaning American fishermen. Congress has forbidden the Head of this Department to prosecute even for evasion of tariff law unless satisfied of "an actual intention to defraud."

TONNAGE OF VESSELS ENGAGED IN AMERICAN FISHERIES, AND THE NATIONALITIES OF THE FISHERMEN.

During the periods of the inquiry made of me by the House, the tonnage of American fishing-vessels of over twenty tons burden, other than whalers, will be seen in Appendix D.

That tonnage reached its maximum 203,459 in 1862, and during the subsequent seven years diminished by more than 70 per cent. The lowest number of tons was touched in the middle of the period between the expiration of the reciprocity treaty of 1854 and the conclusion of the treaty of Washington of 1871. The falling off is perhaps to be attributed in great part to the repeal in 1866 of the laws allowing bounties to the vessels engaged in the fisheries. By the law of 1813 there was paid by the collector of the district where such vessels belonged, to the owner thereof, if the vessel had been employed at sea, in fishing for the term of four months, and for each ton burden, a specified sum, not to exceed \$272 on any one vessel for one season, of

which bounty three-eighths accrued to the owner and the other five-eighths to the several fishermen. In 1817 it was enacted that the bounty shall be paid only to vessels whereof the officers, and at least three-fourths of the crew, shall be citizens of the United States, or persons not the subject of any foreign prince or state. In 1819, soon after the conclusion of the treaty of 1818, the bounties were increased, but not to exceed \$360 for each vessel. In 1864 it was enacted that the bounty shall not thereafter be paid to any vessel until satisfactory proof shall have been furnished to the collector of customs that the import duty imposed by law upon foreign salt has been paid on all foreign salt used in curing the fish on which the claim to the allowance to the bounty is based, and the law was repealed on June 28, 1864, (U. S. Stats. at Large, vol. 13, p. 201,) which required two-thirds of those on board to be American citizens. On July 28, 1866, all laws and parts of laws allowing fishing-bounties to vessels thereafter licensed to engage in the fisheries was also repealed, but under the condition that duties shall be remitted on all foreign salt used by such vessels in curing fish. It seems quite probable that anticipation of the enactment repealing bounties induced, in great part, the great falling off in tonnage between 1862 and 1869.

The best estimate that can be made by this Department of the relation of aliens to citizens engaged in American fisheries, in the North Atlantic, other than whalers, is that during the last year (1886) of the 14,240 employed, seventy-eight per cent. were American citizens.

PRESENT CONDITION OF AMERICAN FISHERIES, AND THE SUM OF
DUTIES COLLECTED ON FOREIGN FISH.

On May 28, 1886, and in furtherance of a suggestion made by our Fish Commissioner, this Department issued a circular letter of instruction to Collectors, a copy of which will be found in Appendix E. The replies received have been transmitted to that Commission, and therefrom valuable facts, respecting our fisheries, have been obtained, some of which the Commissioner has kindly grouped and placed at my disposition. They are respectfully submitted to the House in Appendix E. In Appendix C will be found such an exhibition of the duties collected on fish as the records of this Department, for reasons set forth in the Appendix, make available for immediate presentation to the House.

Respectfully yours,

DANIEL MANNING,

Secretary of the Treasury.

The Honorable

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES,

APPENDIX A.

FROZEN FISH.

CUSTOM-HOUSE, BOSTON,
Collector's Office, June 16, 1866.

Hon. HUGH McCULLOCH,
Secretary Treasury :

SIR : The act of March 2, 1861, relating to duties on imports, provides in section 10 for a duty on "fresh fish foreign caught not otherwise provided for." Among the articles enumerated in section 23 same act, as exempt from duty is, "Fish, fresh caught, for daily consumption."

Fresh salmon and halibut in small quantities are daily brought into this port in British vessels from the Provinces undoubtedly for "daily consumption," but without any *formal* evidence of that fact, such importations have been admitted free of duty.

The appraisers hold that *all* fresh fish, so imported in British vessels, is subject to duty by virtue of said section 10.

The question is constantly occurring, and there being a difference of opinion amongst ourselves here as to the construction of the act, we should feel much relieved if you would give a decision upon the question.

Very respectfully, your obedient servant,

J. M. FISKE,
Special Deputy Collector.

TREASURY DEPARTMENT,
Washington, D. C., June 18, 1866.

COLLECTOR OF CUSTOMS,
Boston, Mass. :

SIR: Your communication of the 16th instant is received, relative to the duty to be imposed on "fresh fish, foreign caught, imported from Canada in British vessels."

In reply thereto, I would respectfully state that it is the opinion of this Department that by that provision of the tariff which admits to free entry "fish, fresh caught, for daily consumption" (section 23, act of March 2, 1861), is understood to embrace all fish imported for consumption, while fresh, in contradistinction to such as might be imported fresh, to be dried, pickled, or otherwise cured for future use.

By the phrase "daily consumption" it is not understood that the fish must be used on the day they are imported, but if there is reason to believe that the fish are to be used within a short time, then they would be entitled to free entry, notwithstanding the fact that there may be no formal evidence that they are intended for daily consumption.

By order :

I am, very respectfully,

J. F. HARTLEY,
Assistant Secretary.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., January 22, 1869.

THOMAS RUSSELL, Esq., *Collector of Customs, Boston, Mass. :*

SIR: In reply to your letter of the 19th instant, the following dispatch has been this day sent you by telegraph :

"Release the schooner Scud. Further by letter."

In the letter referred to, transmitting a communication from Lorenzo Wilson, charterer of the fishing schooner Scud, you state that the schooner arrived at your port on the 14th instant with 800 barrels of American-caught herring, salted, and that the facts of the case are as follows:

That after taking a fishing license of Eastport, with liberty to load and trade, the schooner sailed to St. John, New Brunswick, where her master purchased salt for the

voyage (550 sacks), with twenty-five "fishing anchors," used for herring nets, and manufactured in New Brunswick.

She then cleared from St. John, bound on a fishing voyage. On arrival at Boston, the master sold the herring and landed them without a permit.

The master, however, reported at the custom-house, where he was informed by the clerk, that he was not required to enter his vessel, she being under a fishing license.

You state that you are perfectly satisfied that the parties interested acted in good faith, and that they believed they had a right to land their cargo without entry or permit, or payment of duties, and you recommend that the schooner be allowed to clear at once without any proceedings against her.

In consideration of the alleged causes of her detention and of your recommendation the order for the release of the schooner is hereby confirmed, and you will take no steps against any of the parties to enforce legal penalties for landing the cargo without permit.

You say further that the claimant has, by your direction, made entry of his fish, and made special deposit of the amount of duties, viz, \$826, on the ground that by purchasing salt in a foreign port and mixing it with the fish he rendered his whole cargo dutiable.

The Department has hitherto decided that if foreign salt is used without the limits of the United States, in curing fish of American catch, the fish are not thereby rendered dutiable, nor is the salt so consumed liable to duty.

If salt purchased abroad for the curing of fish is not consumed in the curing, but is brought into an American port, the salt would then be liable to duty, but the fish on board cured with such foreign salt before importation are free of duty.

You will accordingly refund the sum deposited with you by the claimant in payment of duty supposed to have accrued on the fish imported in the *Scud*.

Very respectfully,

H. McCULLOCH,
Secretary.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., June 4, 1875.

COLLECTOR OF CUSTOMS,
Marquette, Mich.:

SIR: I am in receipt of your letter of the 25th ultimo, inquiring whether fish which are caught in Canadian waters, and after being brought into the United States are salted and packed in barrels or packed in ice, are subject to duty, and if so, at what rates.

In reply, I would state that it being assumed that the fish you refer to are caught from the inland lakes separating the Dominion of Canada from the United States, or from the Canadian tributaries thereof, the same are not exempt from duty by virtue of the treaty of Washington of July 4, 1871, and section 2506, Revised Statutes, in pursuance thereof, inasmuch as fish, the products of the inland lakes and tributaries, are not admitted free of duty under said treaty and law.

The general provisions of the tariff, however, allowing free entry of fresh fish for immediate consumption, would, under the ruling of the Department giving construction to the law, apply to fresh fish imported into the United States to be consumed within a short time thereafter, as fresh fish. It will be observed, however, that as the question whether the fish are for immediate consumption can be absolutely verified only in the light of facts occurring after they have been admitted to free entry and have passed from the custody of the Government, great care and circumspection will be required on the part of officers of the customs to see that there is no abuse of the privilege conferred by the law in question. If you have any valid reason to believe that fish are being admitted to free entry which are not entitled to such privilege, you will deny free entry thereof, report the facts to the Department, and await further instructions.

As regards the fish salted and packed in barrels, I have to state that if, as the Department infers from your communication, the fish are so salted and packed after importation, they would, unless coming under some one of the special provisions for different kinds of fish, including that above referred to for fresh fish, be charged with duty at the rate of 50 cents per 100 pounds.

I am, very respectfully,

CHAS. F. CONANT,
Acting Secretary.

TREASURY DEPARTMENT, *June 21, 1876.*

SIR: I have the honor to acknowledge the receipt of your letter of the 26th ultimo, inclosing a communication from John O'Malley, of La Pointe, Wis., making the following inquiries in regard to American vessels fishing upon Lake Superior, viz:

(1) Can an American vessel engage in fishing upon the northern shores of Lake Superior in Canadian waters, with American twine and American labor, salt the fish upon the vessel and bring them into the United States free of duty?

(2) Does an American vessel engaged in fishing or the coasting trade, on clearing for a Canadian port, become liable to tonnage tax?

In reply to the first question, I have to state that neither the treaty of Washington nor any other treaty with Great Britain authorizes American fishermen to fish upon the northern shores of Lake Superior, or provides that fish there caught shall be entitled to free entry into the United States. Such fish, however caught, by permission of the Canadian government, express or implied, on American vessels, and salted therein, would be duty free on entry under the provision in section 2505 of the Revised Statutes for "the produce of the American fisheries," and the decision of this Department, contained in a letter to the collector of customs at Boston, under date of the 22d of January, 1869, to the following effect:

"If foreign salt is used without the limits of the United States in curing fish of American catch, the fish is not thereby rendered dutiable, nor is the salt so used liable to duty.

"If salt purchased abroad for the curing of fish is not consumed in the curing, but is brought into an American port, the salt would then be liable to duty, but the fish of American catch, cured with such foreign salt before importation, are free of duty."

To the second question I answer, that a vessel engaged in fishing or the coasting trade does not become liable to tonnage tax on clearing for a foreign port.

But a coasting vessel so clearing directly, or a vessel entering a Canadian port on the lakes during a fishing voyage, would be required to pay the tax on her return to the United States, provided it had not been paid within a year.

I have the honor to be, sir, your obedient servant,

CHAS. F. CONANT,
Acting Secretary.

Hon. T. W. FERRY,
President of the Senate.

J. M. S.]

CUSTOM-HOUSE, DETROIT, MICH.,
Collector's Office, December 29, 1876.

SIR: I have the honor to represent that the question has been raised at this office as to whether fresh fish frozen into a particular shape for the preservation of the fish and convenience in their transportation to all parts of the United States are dutiable upon their importation into the United States or entitled to free entry under the provisions of section 2505, Revised Statutes, for "fish, fresh, for immediate consumption." The preparation of the fish is made under a patent process owned by Messrs. S. H. Davis & Co., of this city, which patent was issued from the Patent Office of the United States April 6, 1875, and numbered 161596, and also under patents issued by the Governments of Canada and Newfoundland. The fish are frozen at any time of the year into round cakes the thickness of one fish, with backs up, so as to exactly fit into a barrel, seven of said cakes exactly filling one barrel. In this condition the fish are preserved from decay and in a fresh state for any length of time required, in rooms of a low temperature, and shipped to any point desired in refrigerator cars and vans, the patent on which is also owned by Messrs. Davis & Co. Fish so prepared are, although fresh, in no sense intended for immediate consumption, but on the contrary are intended to be retained in a fresh condition for shipment and future consumption. I was yesterday shown a cake of fish prepared by the process above mentioned over one year ago, and they had the appearance of being as fresh as if newly caught.

A large quantity of fish are being prepared by the process mentioned at Amherstburg, Ontario, and it is the intention of the owners to import a portion of the fish so prepared into the United States at this port for sale in the markets of the United States.

In view of the foregoing facts I have to request that I be instructed at as early a day as possible as to what course to pursue upon the importation of fish prepared in the manner above referred to, whether I shall admit them to free entry as "fish, fresh, for immediate consumption," or demand a duty of 50 cents per 100 pounds.

I am, very respectfully, your obedient servant,

D. V. BELL, *Collector.*

Hon. L. M. MORRILL,
Secretary of the Treasury, Washington, D. C.

*Fish frozen for transportation.*TREASURY DEPARTMENT, *January 3, 1877.*

SIR: The Department is in receipt of your letter of the 29th ultimo, in which you ask for a decision as to whether fresh fish, frozen in barrels, imported from Canada, are exempt from duty.

It is understood that the fish referred to are caught in the inland lakes, and consequently that they are not exempt from duty under the Treaty of Washington and section 2506 of the Revised Statutes.

From your statement it appears that the fish are frozen in barrels under a process which has been patented in the United States and Canada, and that by such process they are preserved fresh, and in a condition fit for use for an almost indefinite period of time, when they are kept in a low temperature. It is also understood that such fish are not imported for daily consumption at or near your port, but are intended to be transported in refrigerator cars (also patented for the purpose of carrying these fish) to different parts of the country for sale and future consumption.

Under these circumstances, the Department is of opinion that the fish, when imported in the condition specified, are not exempt from duty under the provision for "fish, fresh, for daily consumption," which, by Department's decision of June 18, 1866, was intended to apply only to fish in the natural condition, intended for use at or about the time of importation, but are dutiable at the rate of 50 cents per 100 pounds, under the provision in Schedule F for "all other foreign-caught fish, * * * fresh, * * * not otherwise provided for.

Respectfully,

L. M. MORRILL,
Secretary.

COLLECTOR OF CUSTOMS,
Detroit, Mich.

DETROIT, *January 11, 1877.*

Hon. L. M. MORRILL,
Secretary of the Treasury, Washington, D. C.:

SIR: I have the honor to state that I have this day filed protest with the collector here against the payment of \$18.94 coin assessed by him upon 3,788 pounds fresh fish imported by me this day. They are caught in the Thames River near Chatham, and sent here for immediate shipment to New York for consumption. It seems to me very unjust that duty should be charged upon these fresh fish for immediate shipment to New York, Philadelphia, or Cincinnati, while (as the collector informs me) they are admitted free for Detroit market. These fish are thrown into barrels and left out to freeze before they are shipped. I am also occasionally shipping some which are frozen by patent process in barrels and shipped to same points that these are, and claim they should all be free, same as heretofore, it being, as before stated, very unjust to discriminate between this and other markets.

In view of the foregoing facts, I trust you will authorize a refund of the amount exacted and also instruct the collector to admit future shipments upon free entry.

Very respectfully,

T. R. MERRILL.

DETROIT, *January 11, 1877.*

Hon. L. M. MORRILL,
Secretary of the Treasury, Washington, D. C.:

SIR: I have the honor to state that I have this day filed protest with the collector of customs here against the payment of \$47.58 coin assessed by him upon 9,517 pounds fresh fish imported by me this day, claiming they should be free as they are imported for shipment at once to Philadelphia for immediate consumption. Another reason for claiming free entry on the particular shipment is that they were caught in American waters and taken to Windsor and placed in refrigerators, where they are withdrawn as required for shipment to New York, Philadelphia, and other points, as well as this market. It seems to me a very unjust discrimination against citizens of New York, Philadelphia, Cincinnati, &c., that they must pay duty upon same fish that citizens of Detroit would be allowed free of duty, as the collector here allows free entry upon all fresh fish which are to be placed upon the market here for consumption.

We are bringing in both foreign and American fish daily, some fresh caught and some from the refrigerators. They are all frozen. Those that come from the refrigerators will not keep as long as those fresh caught, and must of necessity be consumed

as soon as possible on arrival at destination. No salt or other matter comes in contact with those frozen in the refrigerators, and I claim all should be admitted upon free entry. I therefore trust you will authorize a refund of the amount exacted and allow free entry of future shipments.

Very respectfully,

J. B. JESSOP.

CUSTOM-HOUSE, BUFFALO, N. Y.,
Collector's Office, January 15, 1877.

SIR: Messrs. Jones & Trevallee, of this city, desire me to submit for your decision the following inquiry: During the season of 1876 certain fish were caught by fishermen in their employ at Whitefish Point and Marquette, Mich., in the American waters of Lake Superior, brought in vessels to this port, and by them exported to Port Ryerse, Ontario, fresh, for the purpose of having them frozen by a similar process to that mentioned in letter of Department to collector of customs at Detroit, under date of January 3, 1877 (H. B. J.).

They now desire to return them to this port, and ask if they can be brought in free of duty, under section 1687 of the tariff, which provides for the free entry of the products of American fisheries. They have undergone no change of condition except the process of freezing named.

An early reply is respectfully requested.

Respectfully,

R. W. DANIELS,
Collector,
Per C. C. CANDEE,
Deputy.

Hon. SECRETARY OF THE TREASURY,
Washington, D. C.

Hayden.]

TREASURY DEPARTMENT,
January 22, 1877.

R. W. DANIELS, Esq.,
Collector of Customs, Buffalo, N. Y.:

SIR: The Department is in receipt of your letter of the 15th instant, inquiring whether fish, caught in the waters of Lake Superior within the jurisdiction of the United States, and consequently of domestic production, can be carried to Canada and be there subjected to a patent process of freezing for the purpose of preservation, with the privilege of free entry on being returned to the United States.

The process referred to, you state, is similar to that mentioned in Department's letter to the collector of customs at Detroit, dated the 3d instant. In that case the Department held that the fish, being the product of the Canadian fisheries, was not entitled to free entry either under the treaty of Washington or the provision of the free list for "fish, fresh, for immediate consumption," which, under the rulings of the Department, applies only to fish in the condition when caught, and intended for use at or about the time of importation.

This process being thus recognized as effecting a change in the condition of the fish, they cannot, on being returned to the United States under the circumstances detailed by you, be admitted to free entry as American production returned to this country "in the same condition as exported."

By order.

H. F. FRENCH,
Assistant Secretary.

J. M. S.]

CUSTOM-HOUSE, DETROIT, MICH.,
Collector's Office, January 17, 1877.

SIR: I submit the protests and appeals of Mr. T. R. Merrill and Mr. J. B. Jessop, respectively (Nos. 3024e and 3025e), from the decision of this office, assessing duty at the rate of 50 cents per 100 pounds on certain 3,788 pounds fresh fish imported by said Merrill on the 11th instant, and on 9,517 pounds fresh fish imported on the same day by said Jessop.

Referring to Department's decision No. 2285, dated June 4, 1875, and to your letter of (H. B. J.) January 3, 1877, addressed to me, I have to say that said rate of duty was assessed by me upon the importations referred to for the reason that the fish were not imported in their natural condition, and were not intended for immediate

consumption at or near this port, but were intended for shipment to New York and Philadelphia. A large portion of the fish included in the said importation by Mr. J. B. Jessop had been originally frozen in particular shapes by the patent process referred to in my letter of (J. M. S.) December 29, 1876, and the casks of fish so prepared, afterward, and just previous to importation, broken up with a view to evading the payment of duty under the decision in Department's said letter of January 3, 1877, but not so broken and separated as to render them unfit for shipment and preservation for a reasonable length of time. The remainder of the fish in Mr. Jessop's importation and all of Mr. Merrill's importation had been taken from the pens in which they were kept, packed in barrels, and then exposed to the cold and solidly frozen for convenience of shipment.

My understanding of Department's decision in said letter to me, dated January 3, 1877, was and is that the provision of law authorizing the free entry of "fish, fresh for immediate consumption," is intended to apply only to fresh-caught fish in their natural condition, and in such quantities as is reasonable to suppose are for immediate and daily consumption at or near the port where imported, and that all fish imported in such condition and quantity as to warrant the belief that they are intended for shipment to other points must pay duty at the rate of 50 cents per 100 pounds, whether they are frozen under a patent process or in any other manner that will preserve them for and during shipment.

I have the honor to report that the requirements of the fourteenth and fifteenth sections of the act approved June 30, 1864, have been complied with by the appellants.

Very respectfully, your obedient servant,

D. V. BELL.
Collector.

Hon. L. M. MORRILL,
Secretary of the Treasury.

DETROIT, January 11, 1877.

Hon. D. V. BELL,
Collector of Customs, Detroit:

DEAR SIR: I hereby protest against the assessment of one-half cent per pound on 3,788 pounds fresh fish imported by me this day, claiming they should be free, being for immediate consumption on arrival at New York.

They are caught in the Thames River, near Chatham, and sent here for immediate shipment to New York for consumption. I therefore claim the amount exacted (\$18.94 gold) should be refunded.

Very respectfully,

T. R. MERRILL.

DETROIT, January 11, 1877.

Hon. D. V. BELL,
Collector of Customs, Detroit:

DEAR SIR: I hereby protest against the payment of \$47.58 gold assessed by you upon 9,517 pounds fresh fish imported by me this day from Windsor, claiming they should be free, being for immediate consumption on arrival at Philadelphia, where they are to be shipped at once.

I claim also they should be free for another reason, viz, that they are fish caught in American waters in Detroit River, and are placed in refrigerators in Windsor and withdrawn as we require them for shipment. In view of the foregoing facts I claim the amount exacted should be refunded.

Very respectfully,

J. B. JESSOP.

London.]

JANUARY 23, 1877.

COLLECTOR, *Detroit:*

SIR: The Department is in receipt of your letter of the 17th instant, transmitting the appeals (3024e and 3025e) of T. R. Merrill and J. B. Jessop from your decision assessing duty at the rate of 50 cents per 100 pounds on certain frozen fish imported into your port from Canada, which the importers claim to be exempt from duty under the provision in the "free list," for "fish, fresh, for daily consumption."

It appears that the said fish, which are the product of the inland waters of Canada, are not imported in the natural state nor intended for daily consumption, but are preserved by being frozen in barrels by a patent process or otherwise, for the purpose of transportation to distant cities.

Under these circumstances the fish not being "fresh, *for daily consumption*," but in fact preserved, the Department concurs with you in the opinion that they are dutiable at the rate aforesaid under the provision in schedule F, for "all other foreign caught fish * * * fresh * * * not otherwise provided for," and Department's instructions to you of the 3d instant.

Your decision is therefore affirmed.

By order:

Respectfully,

H. F. FRENCH,
Assistant Secretary.

CUSTOM-HOUSE, BUFFALO, N. Y.,
Collector's Office, January 25, 1877.

SIR: Your reply of the 23d instant (H. B. J.) to my inquiry of the 15th instant, whether fish caught in the waters of Lake Superior, within the jurisdiction of the United States, and exported to Canada for the purpose of being frozen can be returned to the United States free of duty, is received.

It is admitted by Messrs. Jones & Trevallee that under decision of the Department, in letter to collector of customs at Detroit, under date of the 3d instant, such fish cannot be returned under 1482 of the free list as American productions returned to this country in "same condition as when exported," but claim they should be admitted to free entry under the provisions of section 2505 of the Revised Statutes for the produce of American fisheries, and Treasury decisions (S. S.) 342 and 2872.

A decision upon this point is respectfully requested.

Respectfully,

R. W. DANIELS,
Collector.
Per C. C. CANDEE,
Deputy.

Hon. SECRETARY OF THE TREASURY,
Washington, D. C.

(1079c.)

Swank.]

TREASURY DEPARTMENT,
Washington, D. C., February 5, 1877.

COLLECTOR OF CUSTOMS, *Buffalo, N. Y.:*

SIR: The Department is in receipt of your letter of the 25th ultimo, renewing the question whether fish caught in the waters of Lake Superior within the jurisdiction of the United States, exported to Canada, and there frozen for the purpose of preservation, can be returned to the United States free of duty.

You state that Messrs. Jones & Trevallee, the parties at whose instance the inquiry is made, concede that the fish, under such circumstances, are not entitled to free entry as being returned to the United States in the same condition as when exported, but claim that they should be admitted to free entry under the provision of the free list for the produce of American fisheries, reference being made to Department's decision of January 22, 1869, and June 21, 1876 (S. S., 342 and 2872), authorizing the free entry of fish caught and cured without the limits of the United States, as sustaining such claim.

In reply you are informed that the fish in the case supposed, being caught in the waters of the United States, the decisions referred to do not apply; and being of domestic production there is no provision of law authorizing their free entry on their being taken to Canada, and thereafter returned to this country in a condition different from that in which they were at the time of being taken to Canada.

By order:

H. F. FRENCH,
Assistant Secretary.

CUSTOM-HOUSE, DETROIT,
Collector's Office, February 9, 1877.

SIR: I submit the protest and appeal of Mr. C. W. Gauthier (No. —) from the decision of this office, assessing duty at the rate of 50 cents per 100 pounds on certain fresh fish imported by him into this district February 7, 1877.

Referring to said appeal, I have the honor to report that the requirements of the fourteenth and fifteenth sections of the act approved June 30, 1864, have been complied with by the appellant, and that I assessed duty on same, not regarding them as "for immediate consumption," but for shipment in the United States for future consumption.

The appeal is inclosed herewith; also protest.

Very respectfully, your obedient servant,

D. V. BELL,
Collector.

Hon. L. M. MORRILL,
Secretary of the Treasury, Washington, D. C.

DETROIT, *February 7, 1877.*

Hon. D. V. BELL,
Collector of Customs, Detroit:

DEAR SIR: I hereby protest against the payment of \$41.97, gold, assessed by you upon 8,395 pounds fresh whitefish imported by me this day for shipment to Philadelphia for immediate consumption. I claim they are entitled to free entry, as they are not frozen, either by patent process or otherwise (see Department letter, T. B. S., January 23, 1877), but are just taken fresh from the water. I pay the amount in order to get possession of the fish, and claim it should be refunded.

Very respectfully,

C. W. GAUTHIER.

DETROIT, *February 7, 1877.*

Hon. L. M. MORRILL,
Secretary of the Treasury, Washington, D. C.:

DEAR SIR: I have the honor to state that I have this day filed protest with the collector of customs at this port against the payment of \$41.97, gold, assessed by him upon 8,395 pounds fresh whitefish imported by me, claiming they should be free, as they are fresh, just taken from the water and not frozen, either by patent process or otherwise. They are for immediate shipment to Philadelphia in the same condition in which they are in at present, and intended for immediate consumption on arrival at Philadelphia. In view of the foregoing facts I trust you will authorize a refund of the amount exacted.

Very respectfully,

C. W. GAUTHIER.

DETROIT, *February 9, 1877.*

D. V. BELL, Esq.,
Collector, Detroit:

DEAR SIR: I hereby protest against the payment of \$129.39 gold assessed by you upon 25,677 pounds fresh fish imported by me this day, claiming they are entitled to free entry as fresh fish for consumption. They are all sold and delivered to parties in Detroit under contract made last fall. I therefore claim the amount should be refunded.

Very respectfully,

C. W. GAUTHIER.

FEBRUARY 17, 1877.

Bell.]
COLLECTOR OF CUSTOMS,
Detroit, Mich.:

SIR: The Department is in receipt of your letter of the 9th instant, submitting the appeal (3236e) of Mr. C. W. Gauthier from your assessment of duty on certain fresh fish imported by him into your district on the 7th instant.

It appears from the appeal that the fish in question are fresh and not frozen, either by patent process or otherwise, and that they are intended for shipment to Philadelphia in their present condition and for consumption on arrival there while fresh.

The fish in question are therefore entitled to free entry under Department's decision of June 18, 1866 (see Synopsis, 1865, 1867, page 55), and you are authorized to adjust the entry accordingly, and to forward a certified statement for the refund of the duties exacted thereon.

By order:

Respectfully

H. F. FRENCH,
Assistant Secretary.

DETROIT, February 21, 1877.

D. V. BELL,
Collector of Customs, Detroit:

DEAR SIR: I hereby protest against the payment of duty assessed by you upon fresh fish imported by me as follows:

February 15, 1877, 16,107 pounds, at one-half cent coin	\$80 55
February 16, 1877, 2,210 pounds, at one-half cent coin	11 05
Total	91 60

claiming they should be free as fresh fish for consumption, and that the amount exacted should be refunded.

Very respectfully,

C. W. GAUTHIER.

WINDSOR, ONTARIO, February 26, 1877.

The SECRETARY OF THE TREASURY,
Washington, D. C.:

SIR: I hereby wish to call your attention to the collection of duties on fresh fish, which I call illegal, and demanded of me at the ports of entry in *Detroit, Mich.*, and at *Suspension Bridge, N. Y.*

I imported at the places set opposite the following entries fresh fish upon which was exacted a duty of one-half cent per pound in gold, which I paid or caused to be paid under protest, to wit:

Where paid.	Date.	Paid per pound.	Amount.
	1877.	Cent.	Pounds.
Detroit	Jan. 12	1	9,439
Do	Jan. 28	1	19,459
Do	Feb. 1	1	2,110
Do	Feb. 7	1	8,343
Do	Feb. 8	1	25,677
Do	Feb. 15	1	14,780
Do	Feb. 15	1	1,327
Do	Feb. 16	1	2,210
Suspension Bridge	Feb. 12	1	11,700
Do	Feb. 17	1	21,660
Do	Feb. 20	1	45,564

The within fish were all fresh fish, and were intended for daily consumption and required to be sold and disposed of with least possible delay, as they would spoil in a short time. The entry of the 12th January, with exception of 1,717 pounds of the 7th February and 4,476 pounds of the entry of February 20 at Suspension Bridge, were fish fresh from the river Detroit. I know that other parties are importing fresh fish free of duty at Detroit. I hereby pray that the duty so unjustly collected may be returned to me, and, if required, can send additional affidavits to substantiate what I now say, that all of these fish were fresh fish and liable to spoil and become of no value in a short time.

I remain, yours truly,

C. W. GAUTHIER.

I, John L. Neur, United States consular agent at Windsor, Ontario, do hereby certify that I know Mr. C. W. Gauttier to be a truthful and reliable person and the person whose name appears as above subscribed, and the statements above set forth so far as my knowledge and belief I believe them to be true.

Dated Windsor, Ontario, February 26, 1877.

JOHN L. NEUR,
Consular Agent, United States.

UNITED STATES ATTORNEY'S OFFICE,
EASTERN DISTRICT OF MICHIGAN,
Detroit, June 13, 1877.

Hon. JOHN SHERMAN,
Secretary of the Treasury:

SIR: I have the honor to inclose herewith compared copy of the decision of Judge Brown, of the United States circuit court, in the case of Gauthier v. D. V. Bell,

collector of the port, in relation to the importation of frozen fish. The case was fully argued, and, as you will see, the decision heretofore arrived at by the Department was sustained by the court.

Very respectfully,

S. M. CUTCHEON,
United States Attorney.

“BROWN, J. :

“Although the fish in question are frozen in barrels or in large pans in a solid mass or cake, I think they are still to be considered as fresh fish. This term is obviously used in contradistinction to fish which are cured, salted, smoked, dried, pickled, or otherwise rendered capable of preservation for an indefinite length of time. The testimony shows clearly that frozen fish retain their flavor so long as the temperature is preserved below the freezing point, and that they are sold in the market and known to the trade as fresh fish.

“The only difficulty in this case arises from the use of the words ‘for immediate consumption.’ While I am strongly inclined to the opinion that fish imported in their natural state, whether to be sold upon the market at the place of importation, or to be shipped to distant towns, would still be for immediate consumption, I think the fact of their being frozen in cakes prior to their importation evinces a manifest intention that they shall not be immediately consumed. While they were sometimes broken up and placed at once upon the market at Detroit, they were more frequently shipped to Cincinnati and Philadelphia, in common cars, and there put upon the market and sold. It was shown that fish so frozen could be kept for months, and even years, with no material loss of flavor or perceptible decay, and that, in the winter, it was no uncommon thing for them to be kept for two or three months, the length of time, of course, depending upon the state of the weather. Under these circumstances, I think they cannot be classified as fresh fish for immediate consumption.

“A portion of these fish were originally caught in American waters, carried to Canada for the purpose of being frozen, and a bond given for their re-exportation to the United States. It was claimed that even under Schedule F., section 2504, these were exempt. As this schedule applies only to ‘foreign-caught’ fish, I think the fish in question fall within the provision of section 2505, page 486, viz: ‘Articles of growth, produce, and manufacture of the United States, when returned in the same condition as when exported, but proof of identity of such articles shall be made under regulations prescribed by the Secretary of the Treasury.’ These regulations are contained in the printed copy of the general regulations, articles 373-4-5-6 and 377, and it was admitted these regulations had not been complied with. This was an indispensable prerequisite to their admission free of duty.

“It was not the intention of Congress, by the use of the words ‘foreign-caught,’ to place domestic fish in a category distinct from that of other articles of home production, or to dispense with the proof of identity required in all other cases, and so necessary to prevent frauds.

“There must be a judgment for defendant.”

TREASURY DEPARTMENT, *March 6, 1877.*

SIR: I transmit herewith the appeal of C. W. Gauttier, dated the 26th ultimo (No. 3420e), from your decision assessing duty at the rate of one-half cent per pound on certain fresh fish imported by him into your port between January 22 and February 16, 1877.

You will please return the inclosed paper, with your report thereon, at an early day, stating particularly whether the party or parties have duly complied with the requirements of section 2931 of the act approved June 22, 1874.

I am, very respectfully,

S. I. KIMBALL,
Acting Chief Clerk.

D. V. BELL, Esq.,
Collector of Customs at Detroit, Mich.

TREASURY DEPARTMENT, *March 6, 1877.*

SIR: I transmit herewith a copy of an appeal of C. W. Gauttier dated the 26th ultimo (No. 3420e) from your decision assessing duty at the rate of one-half cent per pound on certain fresh fish imported by him into your port February 12, 17, and 20, 1877.

You will please return the inclosed paper with your report thereon at an early day, stating particularly whether the party or parties have duly complied with the requirements of section 2931 of the act approved June 22, 1874.

I am, very respectfully,

S. I. KIMBALL,
Acting Chief Clerk.

T. E. ELLSWORTH, Esq.,
Collector of Customs at Suspension Bridge, N. Y.

CUSTOM-HOUSE, SUSPENSION BRIDGE, N. Y.,
Collector's Office, March 8, 1877.

SIR: Referring to your letter of the 6th instant, initials "H. B. J.," transmitting copy of the appeal of C. W. Gauthier from my decision assessing duty on certain fresh fish, I have to report that the fish in question were packed in barrels and frozen by some artificial process, being such as those mentioned and described in Department's letter of January 3, 1877 (No. 3062), and accordingly were held to be dutiable at the rate of fifty cents per 100 pounds.

The importations made February 12 and 17 were entered for consumption and duties paid. The importation made February 20 was entered for transportation in bond to New York.

Very respectfully,

T. E. ELLSWORTH,
Collector.

Hon. LOT M. MORRILL,
Secretary of the Treasury.

J. M. S.]

CUSTOM-HOUSE, DETROIT, MICH.,
Collector's Office, March 8, 1877.

SIR: I have the honor to acknowledge receipt of your letter of H. B. J., March 6, 1877, inclosing appeal (No. 3420e) from my decisions assessing duty at the rate of 50 cents per 100 pounds on certain fresh fish imported by C. W. Gauthier into this port between January 12 and February 16, 1877, directing me to report thereon.

In relation to the eight different importations included in said appeal, I have to say that the first mentioned ("January 12, 1877, paid $\frac{1}{2}$ cent per pound on 9,439") does not appear on the records of this office, but on January 11, 1877, there was imported by J. B. Jessop, a partner of the appellant in the present case, 9,517 pounds of fresh fish frozen under a patent process, upon which duty was assessed, and protest and appeal filed. The appeal was transmitted from this office under date of January 17, 1877, to which you replied in letter of T. B. S., January 23, 1877, sustaining my action. The two succeeding importations ("January 28, 1877, paid $\frac{1}{2}$ cent per pound on 19,459 pounds; February 1, 1877, paid $\frac{1}{2}$ cent per pound on 2,110 pounds") do not appear on our records, but are evidently intended to represent two importations of fresh fish made on the dates mentioned by J. B. Jessop, of 19,550 pounds and 2,457 pounds, respectively, upon which duties were assessed, and against which action no protests have ever been filed in this office. The fourth importation mentioned in said appeal ("February 7, 1877, paid $\frac{1}{2}$ cent per pound on 8,343 pounds") was made as represented, protest and appeal filed in accordance with law, and a refund of the duties exacted ordered in your letter of H. B. J., February 17, 1877.

The four succeeding importations referred to in said appeal were made as alleged, viz: 25,677 pounds on February 8, 14,780 and 1,327 pounds on February 15, and 2,210 pounds on February 16, against the exaction of duty, on which protests were filed in this office in accordance with law, on February 9 and February 21, 1877, and are herewith submitted.

With the exception of the first three importations mentioned in said appeal, none of the fish were frozen under a patent process, but were all more or less frozen in the packages in which they were imported, and were shipped to New York and Philadelphia in that condition, where they *may* have been put on the market for immediate consumption, or they may have been sugar-cured or pickled for future consumption. The large quantities of fish shipped from Canada during the winter to New York and other points East, via this port, Suspension Bridge, and Buffalo, is a probable indication that the fish are intended for preservation and future use, and not for immediate consumption.

The statement by Mr. Gauthier, in his appeal, that the fish mentioned therein were fresh fish from the Detroit River, is calculated to mislead. No fish are taken from the Detroit River in the winter, from the fact that said river is entirely frozen over

during the winter. Mr. Gauthier and other fishermen along the Detroit River catch their fish during the summer and fall, confining them in *pens* along the river banks until such time as they may be wanted, when they are taken therefrom and disposed of. I exacted duty on these fish imported by Mr. Gauthier, and upon importations of a similar nature by other parties, for the reason that I held that the provision of law (sec. 2505, Rev. Stat.) exempting from duty "fish, fresh, for immediate consumption," and the various decisions of the Department thereunder, applied only to such importations of fish, fresh-caught, in their natural condition, and in such quantities as would be reasonable to suppose were for immediate consumption, and acting upon such construction of the law and said decisions, I have exacted duty upon all importations of fresh fish frozen under patent processes, and all such as were otherwise frozen and imported in such quantities as to raise the presumption that they were not intended for immediate consumption *at or near this port*. The only fresh fish I have admitted to free entry within the past two months have been such as were imported in quantities that could be consumed while fresh in this market, and upon the entry of which the importer should subscribe an oath to the effect that the fish were fresh, in their natural condition, and were intended for immediate consumption at or near this port and not for shipment.

The said appeal by Mr. Gauthier, together with two protests covering the four importations mentioned in said appeal as having been made on the 8th, 15th, and 16th of February, is herewith inclosed.

I am, very respectfully, your obedient servant,

D. V. BELL,
Collector.

The SECRETARY OF THE TREASURY,
Washington, D. C.

Adams.]

MARCH 17, 1877.

COLLECTOR OF CUSTOMS,
Suspension Bridge, N. Y. :

SIR: Referring to your letter of the 8th instant reporting on the appeal (3420e) of C. W. Gauthier from your assessment of duty on certain fish imported by him into your port on the 12th, 17th, and 20th ultimo, you will please inform the Department whether the requirements of section 2931 Revised Statutes have been complied with by the appellant.

Department's letter of the 6th instant particularly requested you to furnish this information.

Respectfully,

H. F. FRENCH,
Assistant Secretary.

CUSTOM-HOUSE, SUSPENSION BRIDGE, N. Y.,
Collector's Office, March 20, 1877.

SIR: Referring to your letter of the 17th instant, initials "H. B. J.," relative to the appeal (3420e) of C. W. Gauthier from the assessment of duty on certain fresh fish at this port, I have to report that the importations made February 12 and 17 were consigned to H. J. Gunn, who entered the same and paid duties thereon amounting to \$166.60 coin, February 19, 1877. The requirements of section 2931, Revised Statutes, have been complied with, as the protest transmitted herewith was filed in this office February 27, 1877.

The importation made February 20 was consigned to and entered by James McFeygon for transportation in bond to New York and no protest was filed.

Very respectfully,

T. E. ELLSWORTH,
Collector.

Hon. JOHN SHERMAN,
Secretary of the Treasury.

Adams.]

APRIL 2, 1877.

Mr. C. W. GAUTIER,
(Care of John H. Jenks,)
Windsor, Ontario, Dominion of Canada :

SIR: The Department has this day affirmed the decisions of the collectors of customs at Detroit, Mich., and Suspension Bridge, N. Y., assessing duty at the rate of one-half cent per pound on certain fish imported by you at Detroit February 8, 15, and 16, 1877,

and at Suspension Bridge February 12, 17, and 20, 1877, and declined to entertain so much of your appeal of the 26th ultimo (3420e) as relates to your entries of January 28 and February 1, 1877, at Detroit, and of February 20, 1877, at Suspension Bridge, in consequence of your failure to file protests therefor.

Respectfully,

H. F. FRENCH,
Assistant Secretary.

Adams.]

APRIL 2, 1877.

COLLECTOR OF CUSTOMS,
Detroit, Mich. :

SIR: The Department is in receipt of your letter of the 8th instant, reporting upon the appeal (3420e) of C. W. Gauttier from your assessment of duty at the rate of one-half cent per pound on certain fish imported by him into your port January 28, February 1, 8, 15, and 16 last, and claimed to be entitled to free entry under the provision in the free list, Revised Statutes for "fish, fresh, for immediate consumption."

It appears from your report that it has been the practice at your port to admit to free entry, under the provision of law above cited, such fresh fish only as were imported in quantities that could be consumed while fresh at or near your port, and that the immense quantities of fish imported from Canada at your port, Suspension Bridge, and Buffalo for shipment to New York and Philadelphia is an indication that they are intended for preservation and future use and not for immediate consumption.

The appeal of Mr. Gauttier covers the importation of 162,269 pounds of fish during the months of January and February last, and, upon consideration, the Department is of opinion that such large importations would probably not be consumed immediately.

Your assessment of duty on the importations of February 8, 15, and 16, 1877, is hereby affirmed.

In consequence of the failure of the importer to file protests in due time on their entries of January 28 and February 1, 1877, the Department declines to entertain so much of his appeal as relates thereto.

By order :

Respectfully,

H. F. FRENCH,
Assistant Secretary.

Adams.]

APRIL 2, 1877.

COLLECTOR OF CUSTOMS,
Suspension Bridge, N. Y. :

SIR: The Department is in receipt of your letter of the 20th instant, reporting further on the appeal of C. W. Gauttier from your assessment of duty at the rate of one-half cent per pound on certain fish imported by him into your port on the 12th, 17th, and 20th ultimo, and claimed to be entitled to free entry under the provision in the free list, Revised Statutes, for "fish, fresh, for immediate consumption."

It appears from your report of the 8th instant that the fish in question were packed in barrels and frozen by some artificial process, and that duty was assessed thereon in accordance with Department's decision of January 3, 1877 (S. S., 3062).

Your assessment of duty on the importations of the 12th and 17th ultimo is therefore affirmed.

It appears from your report of the 20th instant that no protest was lodged for the entry of the 20th ultimo, and the Department therefore declines to entertain so much of the appeal as relates to that entry.

By order :

Respectfully,

H. F. FRENCH,
Assistant Secretary.

J. M. S.]

CUSTOM-HOUSE, DETROIT, MICH.,
Collector's Office, June 15, 1877.

SIR: Referring to the appeal (3420e) of C. W. Gauthier from my assessment of duty at the rate of 50 cents per 100 pounds on certain fish imported by him into this port January 28, February 1, 8, 15, and 16 last, and claimed to be exempt from duty under the provision in the free-list, Revised Statutes, for "fish, fresh, for immediate consumption," and to Department's decision thereon, sustaining my action (S. S. 3181), I have the honor to report that after said decision was made known to him (Gauthier), he commenced suit in the United States circuit court against me for recovery of the duties so paid by him. Under stipulations between counsel a jury trial was dis-

pensed with, and the case presented to the court (Judge H. Brown) in chambers. The decision of the court ordering judgment for defendant is herewith inclosed. It will be noticed that Judge Brown, in said decision, inclines to the opinion that fresh fish imported in their natural condition (not frozen by patent process or otherwise) would be entitled to free entry, without regard to quantity imported, or whether they are intended for consumption at or near the port of importation, or intended for shipment to distant parts of the country.

I have to request that I be instructed as to whether or not the Department concurs with such opinion, and if I shall admit to free entry *all* fresh fish imported in their natural condition.

I am, very respectfully, your obedient servant,

D. V. BELL, *Collector.*

Hon. JNO. SHERMAN,
Secretary of the Treasury, Washington, D. C.

CUSTOM-HOUSE, BUFFALO, N. Y.,
Collector's Office, June 20, 1877.

SIR: Unofficial information has been received at this office that the United States district court at Detroit, Mich., has decided that imported fresh fish packed in ice are not entitled to entry as fish intended for immediate consumption.

I respectfully ask to be informed if the decision above referred to applies to all fresh fish packed in ice imported from Canada.

Dealers in this city import fresh fish for use in this market within a short time, while fresh, which are caught in the waters of Lake Huron contiguous to the Dominion of Canada, and which are packed in ice for preservation while in transit from Goderich and other places in Canada to this port, this being the port of importation.

It has been the practice at this port to admit such fish free of duty as being "fresh fish for daily consumption" at or near the place of importation.

I am, very respectfully, your obedient servant,

JNO. TYLER,
Collector.

Hon. SECRETARY OF THE TREASURY,
Washington, D. C.

[Enclosure No. 34.]

(1079 c.)

Mr. Swank.]

JUNE 27, 1877.

COLLECTOR CUSTOMS, *Buffalo, N. Y.:*

SIR: This Department is in receipt of your letter dated the 20th instant, stating that dealers in Buffalo import fish, for use in the market of that city, caught in the waters of Lake Huron, contiguous to the Dominion of Canada, and packed in ice for preservation while in transit from Goderich and other places in Canada to such market.

In reply to your inquiry whether these fish are subject to duty under the decision recently rendered by the United States circuit court at Detroit, Mich., you are informed that said decision related in express terms to fish only which have been frozen in barrels or in large pans in a solid mass or cakes prior to importation.

In this case it was shown to the satisfaction of the court that fish so frozen could be kept for a long period of time without material deterioration.

The mere fact that fish are packed in ice on importation ought not to exclude them from the operation of the provision in the free list for "fish, fresh, for immediate consumption." Satisfactory evidence is presented that they are intended for immediate consumption.

Very respectfully,

H. F. FRENCH,
Assistant Secretary.

Fish, Fresh, for Immediate Consumption.

TREASURY DEPARTMENT, May 23, 1883.

The attention of the Department has been recently brought to the fact that fresh fish are sometimes admitted free of duties, on the northern frontiers, in excessive quantities.

Under the existing regulations, importations of fish which will not probably be consumed immediately must be treated as dutiable; thus, in the case of the importation by a person of 162,269 pounds at Detroit, the action of the collector in assessing duties was affirmed.

The Department is informed that at Sandusky, Ohio, fresh fish caught in Canadian waters, varying in quantity from a few hundred pounds to several tons, are received and sold to dealers for shipment, or for consumption, and that such as remain on their hands are either frozen or salted for future use.

It has heretofore been the custom at the port last mentioned to allow such importations free of duties, and it is surmised that a similar practice has prevailed at other ports.

As the law authorizes the admission free of "fish, fresh, for immediate consumption" only, duties should be paid on any considerable surplus which may be preserved as aforesaid.

On the entry of such fish in any considerable quantity, if the collector of customs is in doubt whether the quantity is excessive, and therefore dutiable under the regulations established, he will require the importer to file an affidavit in the following form:

"I, ———, solemnly ——— that the fresh fish imported by me, and mentioned in the annexed entry, are for immediate consumption, and that no portion thereof is intended for preservation by salting, freezing, or otherwise.

[To be signed.] "———

"Sworn to before me this ——— day of ———, 188—.

"———,

"Deputy Collector of Customs."

If in any case the quantity is so large as to repel the conclusion that the fish is for immediate consumption, duties will be levied; and when it shall appear to the collector that a portion only of any importation should be admitted free, he will exact duties upon the residue.

The attention of importers of such merchandise will be invited by the customs officers to the fact that any fraudulent action on their part, whereby such fish shall be illegally imported free of duties, will subject them to the penalties denounced by the statutes governing such cases.

H. F. FRENCH,
Acting Secretary.

COLLECTORS OF CUSTOMS AND OTHERS.

CHICAGO, December 26, 1885.

Hon. DANIEL MANNING,

Secretary of the United States Treasury, Washington D. C.:

Will you kindly inform what the duties (if any) on fresh fish from Canada? We are called on to pay at Port Huron \$90 on a car load of frozen smelts, from New Brunswick; former years it was only an entry fee. Manitoba for past two years has flooded the western country with their fresh-water frozen fish *duty free* to injury of dealers and home fishermen, and propose doing the same this winter. We have never heard or read that there is any tax imposed by our Government on Canadian fish imported for "immediate consumption," but in fact they do not go into quick consumption, but are held in "freezers" for speculation, to injury of fish caught in United States waters. Many of these imported last winter were salted at Detroit and other points; some here. We understood last winter Canada intended to impose a one-half cent pound export duty to prevent her waters from being exhausted. American fishermen cannot fish in Canadian waters; *the rights* are all let to Canadians, but they sell immense quantities of fish in this country to the great damage of American fishermen at different points on the lakes. At the Sault Saint Marie, Michigan, large quantities of fish were shipped from there caught by Canadians, at the Lizards Islands, that were imported here, Detroit, and as far as Buffalo. The shippers swear they are for "immediate consumption," when in fact their condition is such much of it has to be salted in this country to save it from being a total loss. Will you kindly give us proper information if any duties have been imposed, and conditions if free fish?

Yours, truly,

LAFLIN & CO.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., December 29, 1885.

Messrs. LAFLIN & Co.,
40 State Street, Chicago, Ill.:

GENTLEMEN: In reply to your letter of the 26th instant, you are informed that while fresh fish imported for immediate consumption are entitled to free entry, yet that it would seem that such provision does not extend to a car load of frozen smelts, which it is understood are imported in a frozen condition for the purpose of preservation. Fish thus imported and not intended for immediate consumption are dutiable at the rate of 50 cents per 100 pounds, under the provisions of schedule "G" T. I., new 280, for "foreign-caught fish, * * * whether fresh," &c.

In case, however, you desire to have the question definitely decided by the Department, you can submit it by protest and appeal under section 2931 Revised Statutes, when it will be duly considered.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

CHICAGO, December 31, 1885.

DEAR SIR: We protest against your collection of Grand Trunk Railroad on or about the 26th this month, of a duty of \$90.70, and express 50 cents on a car load of *natural* frozen smelts shipped by W. S. Loggie, Chatham, N. B., and consigned to us, the same being intended for immediate consumption. We have forwarded a duplicate to the Treasury Department at Washington.

Yours respectfully,

LAFLIN & CO.

UNITED STATES COLLECTOR OF CUSTOMS,
Port Huron, Mich.

CHICAGO, December 31, 1885.

Hon. DANIEL MANNING,
Sec'y of the Treasury, Washington, D. C.:

DEAR SIR: In accordance with letter dated December 29, 1885, from the Treasury Department, numbered 2296 e, we protested to the collector of customs at Port Huron, Mich., against charging duties on smelts consigned to us, and inclose a copy of protest to your Department for consideration. While we do not claim that the fish will be or are immediately sold for consumption on arrival at their destination, they are as much so as any *natural* frozen fish that comes in from Canada in the east, or Manitoba in the west, in large quantities, and if the fish from Manitoba are free fish the smelts should be, as each are frozen by weather and not in pans by ice and salt. Frozen fish imported from those places it is impossible to go into *immediate* consumption. They are *preserved* fish really by freezing, and are bought so, that different handlers can hold them in "freezers" until they can be sold at a profit, or during a supposed scarcity of fresh-caught fish, and they pass through several middle-men's hands before reaching the consumers. We would be glad to see a heavy duty on all Canadian fish, but if other importers get their duties remitted by protesting in time we wish to be one of them.

Yours, respectfully,

LAFLIN & CO.

CUSTOM-HOUSE, PORT HURON, MICH.,
Collector's Office, January 9, 1886.

Hon. D. MANNING,
Secretary of the Treasury, Washington, D. C.:

SIR: I am in receipt of your letter of the 4th instant (J. G. M.), transmitting the appeal of Laflin & Co. from my assessment of duty on certain natural frozen smelts imported from Chatham, New Brunswick.

In this case the requirements of section 2931, Revised Statutes, have been complied with, and I have the honor to report the appeal is apparently based on the fact that the fish are "*natural* frozen."

I hold that the particular method of freezing for preservation can have no bearing upon the question whether fish can be imported free of duty. These importations are never in less than car-load lots of from 20,000 to 30,000 pounds; being in such quantities, therefore, as to preclude the idea of "use at or about the time of importation"—(S. 3062); which I hold properly construes the term "immediate consump-

tion" as used in section 2506, Revised Statutes, they can be kept for months, depending upon the state of the weather, and under such circumstances cannot be classified as fresh fish for immediate consumption." (United States Circuit Court judge, in S. 3280.) I fail to perceive the fact that in this case the fish were *artificially* frozen makes any difference. In both that and Laflin's case the object was preservation and future use. (S. 3181.)

But it seems unnecessary to pursue the subject. By section 6970 collectors of customs are instructed that fish of all kinds, the produce of the Dominion of Canada, imported after July 1, 1885, are liable to duty.

Inclosure returned.

I am, very respectfully, your obedient servant,

W. L. BANCROFT,
Collector.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., January 20, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: The Department is in receipt of your letter of the 9th instant, reporting on the appeal, 9340m, of Messrs. Laflin & Co. from your assessment of duty on certain frozen smelts, imported by them from Chatham, N. B., on the 26th ultimo. You report that importations of this character never embrace less than from 20,000 to 30,000 pounds of fish, and that the quantity imported, and the fact that they can be kept for months in this condition, precludes the idea that they are intended for immediate consumption and entitled to free entry under the provision in the free list, act of March 3, 1883 (I. I. new, 699), for "fish, fresh, for immediate consumption."

Your assessment of duty being in accordance with the Department's decisions of January 3, 1877 (S. 3062), and June 27, 1877 (S. 3280), is hereby affirmed.

The fact that the fish in question are frozen naturally and not by artificial methods, does not affect the question as to their being intended for immediate consumption.

Respectfully yours,

C. S. FAIRCHILD,
Assistant Secretary.

LAFLIN & CO., NO. 40 STATE STREET,
Chicago, January 22, 1886.

C. S. FAIRCHILD, Esq.,
Assistant Secretary Treasury:

DEAR SIR: Yours, 340 m, received with copy to collector at Port Huron on our appeal. We have another car in to-day the owner of which wishes us to protest against paying duty, but we think it useless. There are small lots of 1 ton and upwards that come in and are claimed to be for *immediate consumption*, but are not, as they are sold to smaller dealers, or held till retailed by importers, and cannot claim to be used up for food on their arrival. We ship oysters to Manitoba; the parties there claim they pay a Canadian duty of 10c. per gallon; the quantity taken at a time is for *more immediate consumption than any* lots of Canadian fish imported into this country.

Will the same ruling apply to the fresh fish caught in the lakes of Manitoba, naturally frozen there and shipped into this country via rail at Saint Vincent, Minn., or the other line of the Saint Paul, Minnesota and Manitoba Railroad? The Manitoba people seem to be posted, as they want offers for their fish in Winnipeg against their delivering here last winter. Some parties from there claim they pay no duty on deliveries in the East via Canada Pacific Railroad and Toronto; large quantities are claimed to be imported into Buffalo, to the damage of our lake fish.

During the summer heavy fishing is done in Canadian waters at the Lizzard Islands, north of Sault Ste. Marie, and on Huron and Georgian Bay, and imported in too large quantities to go into *immediate consumption*, but is held in this country as *merchandise from three to ten days* awaiting buyers that sell again to dealers before it reaches the consumer—many of them having to be *salted* here instead of on Canadian ground, to escape the duty on salt fish, and some of the stock is artificially frozen and held for winter use or sale. This class of fresh fish is packed in ice, when it comes in cars holding from 1,000 to 2,400 pounds, and sometimes as high as twenty large cars at one shipment. When they escape duties they are bad competitors from our own fisheries; as they get a class of labor cheaper and get their twine cheaper, they can undersell American-caught fish. During the winter contracts are usually made with the heavier fishermen on both sides for their season's catch, and the price paid the fisherman depends partially on whether those fish pay a duty or come in free.

The Manitoba fish mostly come in during winters in car-lots of 20,000 to 25,000 pounds, but they are gradually working in to shipping in summer packed in ice in fish cars like those via Sault Ste. Marie. If you can give us any information regarding duties now about the Manitoba frozen or the summer caught fish, it will help and benefit us and fishermen in our waters. We are in no way interested in fishing, and buy all we handle. We heartily wish the duty was 1 to 2 cents per pound.

Those Canadians flood us at times, making dealers and home fishermen alike lose money, while they do not benefit the consumer only for a few days at a time.

Yours, truly,

LAFLIN & CO.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., January 30, 1886.

COLLECTOR OF CUSTOMS,
Saint Vincent, Minn.:

SIR: The Department is in receipt of a letter, dated the 26th ultimo, from Messrs. Laflin & Co., No. 40 State street, Chicago, Ill., from which it would appear that large quantities of fresh fish caught in the lakes of Manitoba, and naturally frozen, are imported at your port free of duty as fresh fish for immediate consumption, whereas they are not in fact for immediate consumption, but are intended for sale to smaller dealers, or to be held for retail to consumers, by the importers. In connection therewith, I inclose for your information and guidance a copy of a letter addressed by the Department to the Collector at Port Huron, Mich., on the 20th instant, from which you will perceive that the fact that fish are frozen naturally, and not by artificial means, does not affect the question as to their being intended for immediate consumption.

Your attention is also especially directed to the last two paragraphs of Department's decision of May 23, 1883 (S. 5729), for your further guidance in such matters.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M.] TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., January 30, 1886.
COLLECTOR OF CUSTOMS,
Buffalo, N. Y.:

SIR: The Department is in receipt of a letter, dated the 26th ultimo, from Messrs. Laflin and Co., No. 40 State street, Chicago, Ill., from which it would appear that large quantities of fresh fish caught in the lakes of Manitoba, and naturally frozen, are imported at your port free of duty as fresh fish for immediate consumption, whereas they are not in fact for immediate consumption, but are intended for sale to smaller dealers, or to be held for retail to consumers by the importers. In connection therewith I inclose, for your information and guidance, a copy of a letter addressed by the Department to the collector at Port Huron, Mich., on the 20th instant, from which you will perceive that the fact that fish are frozen naturally, and not by artificial means, does not affect the question as to their being intended for immediate consumption. Your attention is also especially directed to the last two paragraphs of Department's decision of May 23, 1883 (S. 5729), for your further guidance in such matters.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M.—C 14, 11205. }
D 133-249. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., January 30, 1886.

COLLECTOR OF CUSTOMS,
Saint Vincent, Minn.:

SIR: The Department is in receipt of a letter, dated the 26th ultimo, from Messrs. Laflin & Co., No. 40 State street, Chicago, Ill., from which it would appear that large quantities of fresh fish caught in the lakes of Manitoba, and naturally frozen, are imported at your port free of duty as fresh fish for immediate consumption, whereas they are not in fact for immediate consumption but are intended for sale to smaller dealers, or to be held for retail to consumers, by the importers.

In connection therewith, I inclose for your information and guidance a copy of a letter addressed by the Department to the collector at Port Huron, Mich., on the 20th instant, from which you will perceive that the fact that fish are frozen naturally, and not by artificial means, does not affect the question as to their being intended for immediate consumption.

Your attention is also especially directed to the last two paragraphs of Department's decision of May 23, 1883 (S. 5729), for your further guidance in such matters.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M.—B 11-4652. }
D 136-144. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., January 30, 1886.

Messrs. LAFLIN & Co.,
No. 40 State street, Chicago, Ill.:

GENTLEMEN: In reply to your letter of the 22d instant, you are informed that the Department cannot pass upon the classification of "Manitoba frozen" and "summer-caught" fish in advance of their importation, and in the absence of protest and appeal from the decision of the collector of customs.

The question whether fish are fresh and for immediate consumption must be decided in each case by the collector in accordance with the rulings of the Department, and the facts as they can be ascertained.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

LAFLIN & CO., CHICAGO, *February 4, 1886.*

C. S. FAIRCHILD,
Assistant Secretary of the Treasury, Washington, D. C.:

DEAR SIR: We inclose protest sent United States collector at Port Huron, to save Loggie the shipper, should other parties succeed in getting their duties refunded. We are in receipt of yours affirming the decision of collector at Port Huron; also yours of January 30, stating, in answer to our inquiries, that it was for the collectors at the Manitoba boundary and Sault Sainte Marie to decide if fish (fresh or frozen) in large lots were subject to duty. We do not know how to get at it unless we import fish, and if a duty is imposed appeal to the Department; but as the sellers want to sell at home, we cannot agree on a price unless we figure a duty same as on a lot of smelts. This the sellers are not willing to do. They claim they are shipping fresh fish in 20,000 lots into this country free of duty. We do not know where the customs are collected on importations from Manitoba into this country, or would write to collector; but it seems to us if the Port Huron collector is right, then all other custom-houses would be instructed to collect same duties on same class of goods. One importer claims he could bring his fish from Port Huron in bond to here. In such case, should the Chicago collector decide they were entitled to free entry, they would come in free, while those that pass at Port Huron would be at a disadvantage of one-half cent per pound (a large disadvantage to a wholesale dealer). There can be no such thing as tons of fish being for "immediate consumption." Fifty or a hundred pounds fish might be for immediate use, but larger quantities usually pass through many hands before reaching the consumer. Cannot this matter be taken up by the Department and a decision reached that will apply to all places of entry from Canada, either in fresh or frozen fish? We, and other dealers as well, cannot conduct our business intelligently when the matter is left for different collectors to determine what fish shall cost us, or what we shall sell at, as Canada fish are heavy competitors at times. A large amount of capital is invested in this country in boats, tugs, nets, freezing-houses, and large bodies of men are employed; all of which is useless if Canada fish can come in free and undersell us.

The lake fishing industry of the United States is much larger than most people are aware of, as no reliable statistics have ever been published. The men are hardy, fearless sailors. Their business is a precarious one, and none of them average more than a living for themselves and families, excepting those having large capital that fish heavily; they have successful years, and make some money in the long run.

Yours, respectfully,

LAFLIN & CO.

J. G. M.—C 14-11788. }
D 133-317. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 8, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: Your assessment of duty at the rate of one-half cent per pound on certain frozen cod-fish and herring imported into your district from British North America, being in accordance with Department's decisions of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and May 23, 1883 (S. 5729), is hereby affirmed on the following appeals submitted by you on the 2d instant, viz.:

20790, C. A. Ingalls, 50 boxes, per G. T. R. R., January 18, 1886.

20800, C. A. Ingalls, 87 casks, per G. T. R. R., January 26, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M.—C 14-11815. }
D. 133-330. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 9, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: Your assessment of duty at the rate of one-half cent per pound, on certain frozen smelts imported into your port from the Dominion of Canada, being in accordance with Department's decisions of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and May 23, 1883 (S. 5729), is hereby affirmed on the appeal (23110) of C. A. Ingalls per rail (car No. 418), January 4, 1886.

Respectfully, yours,

C. A. FAIRCHILD.
Assistant Secretary.

J. G. M.—C 14-12102. }
D. 133-373. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 12, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: In your assessment of duty at the rate of one-half of one cent per pound on certain frozen trout and smelts imported into your district from Canada, being in accordance with Department's decisions of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and May 23, 1883 (S. 5729), is hereby affirmed on the appeals, 27330 and 27340 of C. A. Ingalls, covering importations per rail (2,152 pounds), January 29, 1886 and 20,100 pounds, January 29, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

CHICAGO, *February 9, 1886.*

Hon. DANIEL MANNING,
Secretary of the Treasury, Washington, D. C.:

DEAR SIR: I have the honor to call the Department's attention to the decisions which have been made upon appeals from the assessment of duty at Port Huron and elsewhere upon fresh fish imported during the cold weather in a frozen condition, from Nova Scotia and Canada, for immediate consumption in the large markets of the country.

The collector at Port Huron has been following a decision of January 20, 1886, upon an appeal of Laflin & Co., Chicago, on frozen smelts from Chatham.

Certain clients of mine, Messrs. A. Booth & Son, J. D. McNab & Co., G. S. Sloan, and R. B. Boak, being largely interested in the importation of fresh fish for immediate consumption, have brought in several large lots of smelts, trout, and herring at Port Huron, on all of which a duty has been collected, principally, as I am led to believe, on the ground that the importations "never embrace less than 20,000 to 30,000 pounds of fish, and that the quantity imported and the fact that they can be kept for months in this condition precludes the idea that they are intended for immediate consumption." (See letter of collector, Port Huron, January 19, 1886.)

One of the principal difficulties experienced in securing from the Department a proper decision upon an appeal, is believed to be the failure on the part of appraisers

and collectors to inform the Department of the facts in any particular case fully and in such a manner as to enable the Department to come to a proper understanding of the question presented. In this case the Department has been led into error, it seems, on account of the collector having stated conclusions formed favorable to the assessment of duty rather than a fair arrangement of facts, from which the Secretary could come to a decision within the meaning and intent of the law.

With a view to obtain, if possible, a reconsideration of this fresh-fish question, I have the honor to suggest that the decisions cited in Department letter on Laffin's appeal, viz, 3062 and 3280, do not apply to the facts as they exist in these cases to which I desire to call attention. S. S. 3062 is a case of fish frozen by a patent preserving process, by means of which they may be kept for a long time. S. S. 3280 and Judge Brown's decision are upon a case disclosing the fact that the fish had been frozen "in barrels or in large pans in a solid mass or cake." We import many thousand pounds of such fish so frozen every year, and have never objected to the payment of duty thereon. The fact is, and the collector should have so stated to the Department, that the fish of Laffin, Booth, McNab, Sloan, and Baak are taken in the waters of Halifax, and as soon as they are out of the water freeze stiff on the ice, from where they are picked up and merely thrown loose into barrels and boxes. They are not covered with water and frozen in the barrels or boxes, but, as I say, each individual fish, already frozen, is thrown into the barrels like so many pieces of kindling wood.

Of course, it is only during very cold weather that the fish for immediate consumption can be so transported and got to market in large quantities. Almost all of these fish are sold for consumption in the various markets which are supplied from Chicago long before they arrive, and the shippers have to run the risk of getting them into the market in weather cold enough to preserve them fresh. It is very rare that we have seven days of continuous freezing weather here, and as the fish are caught in a much colder climate, a slight thaw often ruins large quantities of them even before arrival in Chicago.

The collector at Port Huron is in error in stating that the quantities are too large for immediate consumption, as the facts will show. Messrs. Booth & Son are believed to be the largest fish dealers in the United States; they have fish houses in all of the large cities of the West, supplying therefrom the hotels, restaurants, and public generally, and the supply at no time during the coldest weather is more than equal to the demand. They ship from Chicago as high as forty tons of fresh fish by rail during a single week, and the other dealers whose names I have given are very large dealers in fresh fish. They never salt a single fish, and it is fair to assert that not a hundred pounds of the fish imported by them in the manner I have stated are kept on hand for more than a day or two. They are not sold to curers of fish, but go immediately to the tables of the consumers in every city and town accessible by rail from Chicago to Denver. These importations are but a small part of the fresh fish daily consumed in this and adjacent cities. This is the main distributing point, and of course the cold weather is availed of to import the fish in the freshest condition possible.

This is not a doubtful question, and one which justifies a decision in favor of the Treasury, thus to compel the importer if aggrieved to appeal to the courts for correction. The law doubtless means just what those in trade and commerce mean when they say that fish are fresh, and for immediate consumption, viz, that they are to be eaten before undergoing any process calculated to preserve them for future consumption, either of salting, freezing, or smoking. It cannot be that Congress intended fish for immediate consumption should be consumed within the immediate precincts of the custom-house. They are brought many hundred miles before being passed through the custom-house, and the law does not limit the extent of territory which they may traverse, after having been passed through the collector's office, before being consumed. These fish are treated as perishable and are not admitted to the benefits of the immediate-transportation act; hence it is quite clear that there is no consistency between such treatment and the report of the collector. It cannot be supposed that the law is so absurd as to refer only to an occasional string of fish caught with a hook in the waters about Port Huron, or within range of the custom-house there. The importers of these fish are merchants employing enormous capital in their business, and are disposed to deal fairly and honorably with the Treasury Department, and do not think that the great extent of their business should be made a ground for depriving them of the privileges enjoyed by those who are able to import only a few pounds of fish for their immediate use at the place of importation.

There is no uniformity of practice in this business, it seems, from a case which I am informed was brought to the Department's attention on the Massachusetts coast. Last summer the cargo of the schooner Neskletin, of Lockeport, Nova Scotia, was entered at Gloucester, Mass. It consisted of fresh halibut for immediate consumption, and the collector assessed duty upon it, but the Department ordered a reliquidation of so much of the fish as were found to be fresh. Some portions which were sold to smokers were assessed a duty. We hear of fresh fish for immediate consumption being imported in the eastern parts in large quantities, compared with some of which our importations

are quite insignificant. They are passed as free, and very properly so. And we do not believe the Department would have applied the decisions 3062 and 3280 to these cases of ours if the collector had not thrown up his hands in holy horror at the idea of any nation being able to consume 20,000 pounds of smelts in one importation.

We do not want to resort to the courts in these cases. They are too plain for argument; but if the Department will consider them I will procure sworn statements of the extent of the fresh-fish traffic in Chicago carried on by my clients, and transmit them to you in order that you may be able to judge whether in this case the "punishment fits the crime."

Awaiting your reply, I am, very respectfully,

PERCY L. SHUMAN,
Attorney for A. Booth et al.

J. R. L.]

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., February 13, 1886.

Mr. PERCY L. SHUMAN,
12 Borden Block, Chicago, Ill.:

SIR: The Department duly received your letter of the 9th instant, relative to the assessment of duty by the collector at Port Huron, Mich., upon certain fresh fish, so called, imported in a frozen condition from Nova Scotia and Canada, for alleged immediate consumption in the large markets of the country. After a careful consideration of the arguments submitted, the Department sees no occasion for any action in the matter.

The question as to whether fresh fish are for immediate consumption is one to be determined in the first instance by the collector at the port of arrival, who must be guided in such cases by the circumstances surrounding each importation and Department's decisions heretofore rendered in similar cases. It is the opinion of the Department that the term "immediate consumption" cannot be construed to have a different meaning for the several reasons, and an importation of fish, so extensive in quantity as to require days for its distribution to the various markets, and which accordingly could not be considered as for immediate consumption in the warmer season, cannot, by reason of continued low temperature at another season, be considered as entitled to additional privileges in consequence thereof. As stated, the collector at the port of importation must be the judge in the first instance as to whether any particular importation falls within the provision of the free-list, and the Department cannot undertake upon a general statement of the practice in such matters to establish any other rule for his guidance.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. R. L. C. 14-12523. }
D. 133-382. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 13, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: Your assessment of duty on certain fresh fish, being in accordance with Department's decisions of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and May 23, 1883 (S. 5729), is hereby affirmed on the appeal (9340m) of Messrs. Laflin & Co., covering an importation per rail (car No. 1369) January 19 last.

Respectfully yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. R. L. C. 14-12524 }
D. 133-382. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 13, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: Your assessment of duty on certain smelts, being in accordance with Department's decisions of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and May 23, 1883 (S. 5729), is hereby affirmed on the appeal (2306 o) of Summers, Morrison & Co., covering importations per rail (car No. 1565) January 25 last.

Respectfully yours,

C. S. FAIRCHILD,
Assistant Secretary.

BOSTON, *February 17, 1886.*

Hon. DANIEL MANNING,
Secretary of the Treasury, Washington, D. C. :

SIR: On the 18th of December, 1885, we imported from the British Provinces 100 barrels mackerel by the Boston and Maine Railroad, entering the same at the custom-house here and paying duty, and at same time filed our protest and appeal, as has been our custom on all entries of fish since July last.

On the 1st of this month we were notified by the custom-house authorities that by a recent decision of the Treasury Department no more protests would be received until final liquidation of the entries, and then only within ten days of said liquidation.

To-day we are notified that the protest made on the above entry is rejected, and as the entry was liquidated February 1, we are barred from renewing the protest, the ten days having expired. We have not yet received from your Department the customary notice referring us to the collector here for a decision on our appeal in this case.

We would respectfully ask whether we should be barred from our right of protest and appeal under the above circumstances.

Respectfully yours,

EDWARD T. RUSSELL & CO.

HALIFAX, *February 18, 1886.*

TREASURY DEPARTMENT,
Washington, U. S. A. :

On the 20th January, 1886, I made a shipment of fresh frozen fish for immediate consumption to Chicago, Ill.—invoice No. 40, value \$330.10; Mr. Ingalls, collector at Port Huron, through whose care car was sent, as per instructions from your consul-general and railway authorities. On the car arriving at Port Huron it was detained and duty demanded, which my consignee in Chicago had to remit to Port Huron before your authorities would allow car to proceed. This caused a delay of several days, which will be a heavy loss to me beside the duty which was unlawfully collected; but I presume it will be promptly returned to me or my agent in Chicago when it is properly brought to your notice. An early reply is solicited.

Yours, truly,

C. W. OUTHIT.

CHICAGO, 2, 28, 1886.

C. S. FAIRCHILD, Esq.,
Assistant Secretary Treasury, Washington, D. C. :

DEAR SIR: We have no answer from you to ours of February 4. We have written to collectors at Saint Vincent, Minn., and Sault Saint Marie, Mich. The former decides that fish in large quantities are subject to duty of 50 cents on the 100th. The latter says "he will likely continue the practice of passing fresh fish free for immediate consumption until otherwise ordered by the Department." The fish entered at that place for import to United States are in such quantities as to preclude the idea of immediate consumption, their shipments from them ranging from 1, 2, and 3 tons to 20 tons, twice a week, to this port, and probably as much more for Detroit, Buffalo, Cleveland, and other places, all of which do not go into immediate consumption, but pass through several hands before reaching consumers. Next month many fishermen come in to contract their season's catch, and it is important to both buyer and seller to know if Canadian fresh fish packed in ice in large quantities are subject to duty or not.

Hoping for an early reply, we are,

Yours, respectfully,

LAFLIN & CO.

J. R. L. C. 14-12,566. }
 D. 133-410. }

TREASURY DEPARTMENT,
 OFFICE OF THE SECRETARY,
Washington, D. C., February 17, 1886.

COLLECTOR OF CUSTOMS,
Bangor, Me. :

SIR: The Department is in receipt of your letter of the 12th instant, reporting on the appeal 23100, of the Maine Central Railroad Co., against the exaction of duty at the rate of 25 per cent. ad valorem, on certain frozen salmon imported at Vanceboro, in your district, from Canada, on the 22d ultimo, the appellants claiming that such fish are free of duty under the existing tariff laws.

The Department has heretofore decided that frozen salmon of the character of those in question are dutiable on importation at the rate of $\frac{1}{2}$ of one cent per pound, and you will so instruct your deputy at Vanceboro.

No refund of the difference between the rate properly due ($\frac{1}{2}$ of one cent per pound) and 25 per cent. ad valorem, the rate assessed, can be made, as the appellants have not claimed the correct rate in their protest and appeal.

Respectfully, yours,

W. E. SMITH,
Assistant Secretary.

J. G. M. B. 11-6251. }
D. 136-307. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 23, 1886.

Messrs. E. T. RUSSELL & Co.,
P. O. Box 5279, Boston, Mass.:

GENTLEMEN: In reply to your letter of the 17th instant, you are informed that the Department, by letter to the collector of customs at Boston, dated the 9th instant, declined to entertain your appeal, 2313 O-986, covering certain salt fish imported from Canada, for the reason that the protest therein was filed prior to the date of liquidation, and that due notice of Department's action was forwarded to your address on the same date.

As it appears from your own statement that the entry in the case you refer to was liquidated February 1, on which date you were notified by the custom-house authorities of the Department's decision that protests filed prior to the date of liquidation could not be entertained, no reason is perceived for reconsidering the action of the Department in refusing to entertain the appeal in question.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

CUSTOM-HOUSE, BOSTON, MASS.,
Collector's Office, February 25, 1886.

Hon. DANIEL MANNING,
Secretary of the Treasury, Washington, D. C.:

SIR: Respectfully referring to Department letter (J. G. M.) of the 9th instant, inclosing the appeals 2312o-8o, 2313o-986, 2314o-91o, 2315o-75, forwarded with my report thereon on the 5th instant, wherein I am informed that said appeals cannot be entertained under Department circular of the 23d ultimo. I beg leave respectfully to return 2313o-986 of E. B. Russell & Co., wherein the filing of protest and liquidation of the entry occurred prior to February 1 instant.

Awaiting the further direction of the Department in the premises, I am, sir, your obedient servant,

L. SALTONSTALL,
Collector.

J. G. M. C. 11-13238. }
P. 133-467. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 25, 1886.

COLLECTOR OF CUSTOMS:
Boston, Mass.:

SIR: Your assessment of duty on certain salted salmon imported into your port from Canada, via St. Albans, Vt., since July 1, 1885, being in accordance with Department's decisions of June 17, 1886 (S. 6970), and July 14, 1886 (S. 7020), is hereby affirmed on the following appeals submitted by you on the 19th instant, viz, $\frac{2}{13} \frac{26}{9} \frac{2}{0}$, D. W. Job & Co., per R. R., February 11, 1886; $\frac{2}{13} \frac{27}{0} \frac{2}{0}$, E. T. Russell & Co., per R. R., February 8, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

B. 11-6271. }
D. 136-335. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 25, 1886.

C. W. OUTHIT, Esq.,
118 to 120 Barrington street. *Halifax, N. S.:*

SIR: The Department is in receipt of your letter of the 18th instant, in regard to the importation at Port Huron, Mich., of frozen fish and of duties levied thereon.

In reply I transmit herewith a copy of a letter dated the 20th ultimo, addressed to the collector of customs at Port Huron, in regard to a similar case, and have to inform you that, as understood by the Department, the action of the collector at Port Huron, in assessing duty upon your importation, was in accordance with the usual practice in such cases.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary

J. G. M. C. 14-13269. }
D. 138-15. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 27, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: The Department is in receipt of your letter of the 12th instant, submitting the following appeals from your assessment of duty on certain frozen fish, imported at your port, viz: 29440, C. A. Ingalls, January 9, 1886; 29450, E. W. Bromilow & Co., January 26, 1886; 29460, G. C. Sloan, January 30, 1886; 29470, R. B. Boak, January 30, 1886; 29480, R. B. Boak, February 3, 1886; 29490, C. A. Ingalls, February 8, 1886.

You report that the importations are similar in character to that of Mr. C. A. Ingalls, covered by the Department's decision of the 20th ultimo (not published).

The claim of the appellants that the fish in question are exempt from duty under the provision in the free list, act of March 3, 1883 (T. I. new 699), for "fish, fresh, for immediate consumption," is therefore rejected, and your assessment of duty thereon affirmed.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M. C 14-13263. }
D 138-9. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., February 27, 1886.

COLLECTOR OF CUSTOMS,
Boston, Mass.:

SIR: Your assessment of duty on certain salted cod and mackerel imported into your port from Canada since July 1, 1886, being in accordance with Department's decisions of June 17, 1885, S. 6970, and July 14, 1885, S. 7020, is hereby affirmed on the appeal 29840-144 of A. S. Vinsor & Son, covering an importation per S. G. Irwin, December 28, 1885.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M. C 141-3384. }
D. 138-27. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., March 3, 1886.

COLLECTOR OF CUSTOMS,
Marquette, Mich.:

SIR: I transmit herewith a letter from Messrs. Laffin & Co., of Chicago, dated the 28th ultimo, in which it is stated that the practice at Sault St. Marie, in your district, is to admit free of duty as "fresh fish for immediate consumption," large quantities of frozen fish, ranging from one to twenty tons per importation, for transportation to Detroit, Buffalo, Cleveland, and other places.

I also enclose, for your information and guidance in such matters, copy of Department's letter of January 20, last, to the collector of customs at Port Huron, Mich., on similar importations at that port, and I will thank you to return the first-named enclosure, with a report thereon, at your early convenience.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. B 11-6895. }
D. 136-375. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., March 3, 1886.

Messrs. LAFLIN & Co.,
40 State street, Chicago, Ill.:

GENTLEMEN: The Department is in receipt of your letter of the 4th ultimo, with inclosure, and also your letter dated the 28 ultimo, in the matter of the alleged illegal importations of frozen fish at Sault St. Marie.

The inclosure (appeal) has been forwarded to the collector at Port Huron, Mich., for his report thereon, on receipt of which the matter will be duly determined.

Respecting the allegation that fish are illegally imported at Sault St. Marie, you are informed that a communication has this day been addressed to the collector of said district at Marquette, Mich., calling for a report as to the practice in question, on receipt of which such steps will be taken as are necessary to secure uniformity at the various ports of importation in such matters.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

CUSTOM-HOUSE, BOSTON, MASS.,
Collector's Office, March 9, 1886.

Hon. DANIEL MANNING,
Secretary of the Treasury, Washington, D. C.:

SIR: Respectfully referring to Department letter (J. G. M.) of the 27th ultimo, inclosing a copy of the Department's decision of the 20th of January, 1886, on the appeal (9340^m) involving the classification for duty of certain frozen smelts imported into the port of Port Huron, I desire to be instructed whether, under said decision, fish imported in a frozen condition are to be excluded from the category of "fish, fresh, for immediate consumption," under T. I., new, 699, irrespective of the quantity contained in any given importation.

The Department cites S. S. 3062 and 3280 of 1877. Was it the intention of the Department in its decision of January 20, 1886, to overrule that of May 23, 1883 (S. S. 5729), or is that to be regarded as still operative under which it is understood that fish, although frozen naturally, are entitled to free entry, provided the quantity is not "so large as to repel the conclusion that the fish is for immediate consumption"?

I would add that the requirements of S. S. 5729 have been rigidly enforced at this port.

Very respectfully, your obedient servant.

L. SALTONSTALL,
Collector.

J. G. M. C 14-13854. }
D. 138-103. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., March 12, 1886.

COLLECTOR OF CUSTOMS,
Boston, Mass.:

SIR: In reply to your letter of the 9th instant, you are informed that it was not the intention of the Department's decision of the 20th of January last, concerning the classification of frozen smelts imported into the port of Port Huron, Mich., to revoke the decision of May 23, 1883, under which fish, although frozen, are entitled to free entry (when imported in limited quantities) as fish, fresh, for immediate consumption. It is only when fresh fish in the frozen condition are imported in excessive quantities, and for purposes other than immediate consumption, that they are excluded from free entry.

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

J. G. M. C 14-14002. }
D. 138-124. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., March 15, 1886.

COLLECTOR OF CUSTOMS,
Boston, Mass.:

SIR: The Department is in receipt of your letter of the 25th ultimo, returning the appeal 23130-896 of Messrs. E. T. Russell & Co., covering their importation of herring, mackerel, and oil, per Muriel, December 26, 1885, which appeal the Department, in

its letter of the 9th ultimo, refused to entertain for the reason that it appears from the indorsement thereon that the protest and appeal had been filed prior to the liquidation and contrary to the rule laid down in Department's decision of January 23, 1886 (S. 7386).

As it now appears from the amended indorsement on said protest that the entry was liquidated January 13, 1886, and that it accordingly does not fall within the prohibition of the decision above cited, the Department decides that the appeal can be entertained.

Your assessment of duty therefore on the merchandise covered thereby being in accordance with Department's decision of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14. 15477. }
D. 138-274. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 1, 1883.

COLLECTOR OF CUSTOMS,
Bangor, Me. :

SIR: Your assessment of duty on certain salted salmon imported into your district from Canada since July 1, 1885, being in accordance with Department's decisions of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed on the appeal 44730 of Messrs. E. T. Russell & Co., per railroad via Vanceboro', March 6, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14. 15465. }
D. 138-276. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 1, 1886.

COLLECTOR OF CUSTOMS,
Boston, Mass. :

SIR: Your assessment of duty on certain salted mackerel and herring imported into your port from Canada since July 1, 1885, being in accordance with Department's decisions of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed on the following appeals submitted by you on the 26th ultimo, viz: 4660-182. E. T. Russell & Co., per "St. Pierre," March 9, 1886. 4661-183. E. T. Russell & Co., per "Linn O'Dee," March 5, 1886. 4662-184. Whitney Pousland & Co., per "Louise," March 8, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14. 15483. }
D. 138-274. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 1, 1886.

COLLECTOR OF CUSTOMS,
Saint Vincent, Minn. :

SIR: Your assessment of duty at the rate of 50 cents per one hundred pounds on certain frozen fish imported into your district from Canada, being in accordance with Department's decisions of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and January 20, 1886 (copy furnished you on the 30th of January), is hereby affirmed on the following appeals forwarded by you on the 22d ultimo, it appearing that the said fish are imported in such large quantities as to preclude the presumption that they are for immediate consumption, as claimed by the appellants, viz: 46580, Sinclair & Flanagan, 26,000 pounds per rail, March 18, 1886; 47250, T. H. Jones, 24,000 pounds per rail, March 18, 1886; 47260, T. H. Jones, 30,000 pounds per rail, March 20, 1886; 47260, T. H. Jones, 20,000 pounds per rail, March 20, 1886; 47260, T. H. Jones, 24,000 pounds per rail, March 20, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14. 16011. }
D. 138-311. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 6, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: Your assessment of duty at the rate of 50 cents per one hundred pounds on certain fresh fish (frozen), claimed to be exempt from duty on the ground that they were imported for immediate consumption, being in accordance with Department's decisions of May 23, 1883 (S. 5729), and January 20, 1886 (not published), is hereby affirmed on the appeal, 46310, of C. A. Ingalls, covering an importation of 23,850 pounds, per "Huron", March 8, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14. 16121. }
D. 138-319. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 7, 1886.

COLLECTOR OF CUSTOMS,
Boston, Mass.:

SIR: Your assessment of duty on certain salted mackerel and alewives imported into your port from Canada since July 31, 1885, being in accordance with Department's decisions of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed on the following appeals submitted by you on the 2d and 5th instant, viz: $\frac{4796}{188}$, E. T. Russell & Co., per "Linn O'Dee," March 6, 1886; $\frac{4796}{197}$, A. Winsor & Son, per "St. Pierre," March 10, 1886; $\frac{4797}{198}$, A. Winsor & Son, per "Linn O'Dee," March 13, 1886; $\frac{4798}{200}$, A. Winsor & Son, per "Annie Simpson," March 10, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14. 16128. }
D. 138-320. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 7, 1886.

COLLECTOR OF CUSTOMS,
Chicago, Ill.:

SIR: Your assessment of duty on certain salted mackerel and herring imported into your port from Canada since July 1, 1885, being in accordance with Department's decisions of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed on the following appeals, submitted by you on the 1st instant, viz: $\frac{4805}{371}$, R. B. Boak, per R. R., January 26, 1886; $\frac{4806}{378}$, R. B. Boak, per "Huron," February 8, 1886; $\frac{4807}{376}$, R. B. Boak, per "Huron," February 8, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14-16704. }
D. 138-391. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 14, 1886.

COLLECTOR OF CUSTOMS,
Chicago, Ill.:

SIR: Your assessment of duty on certain salted mackerel imported at your port from Canada since July 1, 1885, being in accordance with Department's decisions of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed on the appeal $\frac{4877}{388}$ of R. B. Boak, per "Linn O'Dee," February 23, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 14 16706. }
D. 138-385. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 14, 1886.

COLLECTOR OF CUSTOMS,
St. Vincent, Minn. :

SIR: Your assessment of duty on certain 20,300 pounds of frozen fish imported at your port from the province of Manitoba, being in accordance with Department's rulings of January 3, 1877 (S. 3062), June 27, 1877 (S. 3280), and January 20, 1886 (unpublished), is hereby affirmed on the appeal 48780 of Messrs. A. Booth & Sons, March 20, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

ST. JOHN, April 14, 1886.

The SECRETARY OF THE TREASURY, Washington:

SIR: I shipped a car-load of frozen herring on January 15, consigned to Messrs. E. W. Brownlow & Co., of Chicago. After they arrived at Port Huron the collector would not allow the car to proceed until the duties, amounting to \$101.60, were paid, which I did pay under protest. At the same time frozen herring were being admitted into the United States at Eastport free.

I therefore cannot see why a distinction should be made between an inland port and a sea-board one.

I would respectfully ask for a return of the amount of duties paid by me.

I remain your obedient servant,

G. L. YOUNG.
Per LANGAN.

J. G. M. B. 11-10928. }
D. 140-323. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, April 24, 1886.

G. L. YOUNG, Esq.,
St. John, N. B. :

SIR: In reply to your letter of the 14th inst., alleging a difference in the classification at inland and seaboard ports of frozen herring, you are informed that the action of the customs officials at the several ports is governed by the provision of the *existing* tariff acts, and that *importers* aggrieved thereby have ample remedy by protest and appeal, as prescribed by section 2931, Revised Statutes.

I will state, however, that frozen herring are not *ipso facto* dutiable either at Eastport or at Port Huron, their non-dutiable character being dependent upon the fact of their being fresh and for *immediate consumption*.

Otherwise they are dutiable, and the question in each case must be determined by the collector at the port of importation, subject to review by the Department, on protest and appeal as aforesaid, if importers so desire.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

CUSTOM-HOUSE, MARQUETTE, MICH.,
Collector's Office, April 14, 1886.

Hon. SECRETARY OF THE TREASURY,
Washington, D. C. :

SIR: I have the honor to again refer to D. L., March 3, last (J. G. M.) relating to the practice at Sault Ste. Marie, in this district, of admitting free of duty as "fresh fish for immediate consumption," large quantities of frozen fish, for transportation to Detroit, Cleveland, Chicago, and other places. I inclose you herein letter from the deputy collector at Sault Ste. Marie, under date of March 11, last, reporting fully as to the condition of the fish so imported. I also inclose herein letter from E. S. B. Sutton, of Sault Ste. Marie, under date of April 10, last, protesting against my instructions to the deputy collector of that port to assess as dutiable all importations of fish exceeding 500 pounds in amount. I would respectfully state that the instructions so given by me were made to conform with the practice at Port Huron, Mich., as requested in your letter, and as advised by the collector at Port Huron. Asking your consideration of the inclosures herein, and your further instructions in the premises if you have any to issue,

I am, respectfully, yours,

C. H. CALL,
Collector.

J. G. M. C. 15-681. }
D 138-471. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., April 26, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: The Department is in receipt of numerous complaints from various parties against the action of the deputy collector at Sault Ste. Marie, in assessing duty on all importations of fresh fish exceeding 500 pounds in quantity, brought to that port.

By a letter dated the 14th instant, received from the collector at Marquette, Mich., it appears that the deputy collector at Sault Ste. Marie acted under instructions given by the collector at Marquette, which instructions were made to conform with the practice at your port.

I will thank you to give this matter your immediate consideration, and forward an early reply, stating the practice at your port in such cases, and if it conforms to that followed at Sault Ste. Marie, to state your reasons and authority for such course.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 15-1508. }
D. 141-76. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., May 5, 1886.

COLLECTOR OF CUSTOMS,
Boston, Mass.:

SIR: Your assessment of duty on certain salted mackerel and alewives imported at your port from Canada since July 1, 1885, being in accordance with Department's decisions of June 17, 1885 (S. 6970), and July 14, 1885 (S. 7020), is hereby affirmed on the appeal ⁵³²⁸₂₉ of Messrs. E. T. Russell & Co., per schooner, Louise, March 9, 1886.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 15-2130. }
D 141-133. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., May 14, 1886.

COLLECTOR OF CUSTOMS,
Detroit, Mich.:

SIR: Enclosed herewith please find letters dated the 16th and 19th ultimo, received from Messrs. S. H. Davis & Co., from which it would appear that fish are being entered at your port free of duty in consignments of 4 and 5 tons each. Also that while imported herring are assessed for duty when imported in lots larger than 500 pounds each, whitefish and trout are admitted free.

As it is highly important that the practice at the several lake ports should be uniform in this matter, I will thank you to return the enclosure with a report from yourself stating the practice at your port in such cases, and giving your reasons and authority therefor.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

DETROIT, MICH., April 19, 1886.

C. H. CALL, Esq.,
Collector of Customs, Marquette:

DEAR SIR: We are informed by your deputy at the "Soo" that he has been instructed to collect a duty of 50 cents per 100 pounds on all consignments of fresh fish imported at the "Soo" over 500 pounds in weight.

Is this order intended to cover whitefish and trout for immediate consumption, or only for fresh herring? We were led to believe from the tone of his letter that it also covered the former, but we think he has misconstrued your instructions.

It is the custom of the collector at this port, Mr. Livingston, to levy one-half cent per pound on herring in larger than 500-pound lots, but he informs me that whitefish and trout will be this, as in former years, admitted free of duty. He also informs us that the same rule is observed at Port Huron and the districts east of here.

We were well aware of the law exacting a duty on herring, but our collector knows of no Department order directing a duty on fresh white and trout in any quantity.

We are quite extensively interested in importing fish (white and trout only) at the "Soo," and naturally wish to have this matter adjusted before we commence operations there, as it would be a serious disadvantage to us to be compelled to pay a duty there while our competitors are entering them here free.

Trusting that if your deputy at the "Soo" has misconstrued your order, you will have it speedily rectified, we remain,

Respectfully, yours,

S. H. DAVIS & CO.

DETROIT, MICH., *April 16, 1886.*

HON. SECRETARY OF THE TREASURY,
Washington:

DEAR SIR: We have been informed by your deputy collector at Sault Saint Marie that he has been instructed to collect a duty of $\frac{1}{2}$ cent per pound on all consignments of fresh fish entered at that point over 500 pounds in weight and coming from Canada.

We wish to know whether this order is a general one at all ports of entry or simply confined to this one port? We ask because fish are now being entered from Canada at this port in 4 and 5 ton consignments free of duty.

We are extensively interested at the "Soo," and naturally protest against paying duty there unless the same tax is levied at all other points, viz: Cheboygan, Port Huron, Detroit, Cleveland, Buffalo, &c., all of which ports are now entering fish free of duty.

Last season all of our fish from Canada (that is, fresh and for immediate consumption) came over free of duty; and, if not asking too much, would like to know the cause of this reversal.

This is a matter of serious importance to us, and an early solution of our trouble is earnestly solicited.

Very respectfully,

S. H. DAVIS & CO.

J. G. M.]

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., June 16, 1886.

TO THE SOLICITOR OF THE TREASURY:

SIR: Paragraph 699 of the "free list," act of March 3, 1883, provides for the free entry of "fish, fresh, for immediate consumption," while paragraph 280 of the same act provides that "foreign-caught fish, whether fresh," &c., "not specially enumerated or provided for," shall be dutiable at the rate of fifty cents per one hundred pounds. Under the former provision a practice has arisen, at most of the frontier ports, of admitting to free entry quantities of Canadian fish imported in cars and vessels, frozen or packed in ice, which are intended for distribution to the various large cities of this country, where they are either immediately disposed of or placed on ice to be sold without further process of preservation. The question as to whether fish so imported can be considered as for *immediate consumption* is respectfully submitted for your consideration, and in this connection I desire to state that the practice has at several ports grown to such proportions, ranging from 500 pounds to several tons per shipment, that the determination by the collector in such instance of whether such quantity can be considered as for immediate consumption is extremely difficult, and has resulted in a wide range of decisions at the several ports, unsatisfactory alike to officers and importers. The provision in article 280 for foreign "caught fish, fresh," assessing duty thereon at the rate of fifty cents per hundred pounds, would seem to indicate that such fish when imported otherwise than for immediate consumption should pay duty. A rule has been suggested to the effect that all importations of fresh fish which are intended to be preserved in ice and sent in refrigerator cars or otherwise to other localities, and which are not intended for consumption on or about the time of importation, and at or near the port of arrival, should be held as dutiable under the paragraph last named. Such has not been the practice heretofore, but in view of the unsettled condition of affairs into which the present practice has brought the importation of fresh fish, your opinion is respectfully requested as to what rule can safely be adopted in the premises.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

ST. JOHN, *July 15, 1886.*

The TREASURY DEPARTMENT,
Washington, D. C.:

GENTLEMEN: On the 14th of April last I wrote you concerning a car-load of fresh herring shipped by me to Chicago for immediate consumption on the 15th of January, present year.

They arrived at Port Huron on 26th and were entered for immediate consumption, and duties amounting to \$101.60 were paid.

On January 28, C. A. Ingalls, acting as agent for the consignees, E. W. Bromibon & Co., of Chicago, filed protest and appeal, which the collector at Port Huron informs me were forwarded to the Department at Washington on February 12, 1886.

As you have given me to understand in your favor of 24th April that the duties would be refunded if the fish were entered for immediate consumption and protest duly filed;

That being the case, and not having received any remittance, Mr. Murray, our A. M. consul, advised me to write you again, and consequently have taken that liberty.

Yours, respectfully,

G. L. YOUNG.

J. R. L. B 12-505.] TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
D 144-279.] *Washington, D. C., July 20, 1886.*

Mr. G. L. YOUNG,
St. John, N. B.:

SIR: In reply to your letter of the 15th instant, you are informed that the protest and appeal of Mr. C. A. Ingalls, covering an importation of frozen herring by E. W. Bromilow, of Chicago, January 28, 1886, was duly received, and the action of the collector at Port Huron in said case affirmed by Department's letter of February 27 last.

You are also informed that the "immediate consumption" required by the tariff in order to enable fresh fish to be imported free of duty is not complied with by the withdrawal of fish under a "consumption" entry, but, as stated in said letter, the question whether such fish are for immediate consumption must be determined in each case by the collector at the port of importation, subject to review by the Department, as in this case, on protest and appeal.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

DEPARTMENT OF JUSTICE,
OFFICE OF SOLICITOR OF THE TREASURY,
Washington, D. C., September 7, 1886.

SIR: I have considered the question presented by your letter of June 16 last, in regard to the rule that should govern in the admission to free entry of fresh fish for immediate consumption.

In the free list of the act of March 3, 1883 (T. I., 699), provision is made for the free entry of "fish, fresh, for immediate consumption." By another clause of the same act duty at the rate of 50 cents per 100 pounds is assessed (T. I., 280) on "foreign-caught fish imported otherwise than in barrels or half-barrels, whether fresh, smoked, dried, salted, or pickled, not specially enumerated or provided for in this act." It is stated that a practice has arisen at most of the frontier ports of admitting to free entry quantities of Canadian fish imported in cars and vessels, frozen or packed in ice, which are intended for distribution to the large cities of this country, where they are either immediately disposed of or placed on ice to be sold without further process of preservation. It is also stated that a rule has been suggested to the effect that all importations of fresh fish intended to be preserved in ice, and transported as above stated, with no intention of consumption on or about the time of importation and at or near the port of arrival, should be held dutiable under the provision last mentioned herein. The question as to the meaning of immediate consumption within the intent of the act of Congress is a difficult one in this connection. Foreign-caught fish imported fresh are dutiable, and fresh fish imported for immediate consumption are free of duty. These two provisions must be reconciled. In the tariff act of 1861 the language applicable to the free entry of this article was "fish, fresh, caught for daily consumption." This continued until the act of 1870 included it in the free list as "fish, fresh, for immediate consumption." It was brought into the Revised Stat.

utes according to the latter description, and was so re-enacted in the tariff act of 1883, now in force. By the use of the term "immediate" no change was intended from the former condition expressed by the term "daily." These two terms are interchangeable as here used. They both relate to current time. Where Congress has not defined the meaning of terms used, or has not limited or qualified them, it does not become the executive officers of the Government to limit or qualify them beyond their ordinarily accepted or popular meaning. The fish to be imported free must be fresh, that is, not salted, smoked, pickled, or preserved. The fact that they are packed in ice has no significance in determining this question. Neither does the quantity in any one importation signify anything, nor the distance to which it may be the purpose to transport them. The collector at the port of arrival should judge from all the circumstances as to their character and whether they are for immediate consumption, that is, whether they are brought into the country to supply the present demand of the market; whether they are to become at once a part of the daily food supply for the people; not that they are to be eaten the same day of arrival or the next day, but are brought in with this expectation or possibility in view. The illustration given by the collector at Detroit of large importations of whitefish, lake trout, &c., at once dispatched to different large cities, viz., Cincinnati, Indianapolis, Saint Louis, &c., in fish cars packed with ice, to be laid down in the market of those cities and sold at the earliest possible time, seems to me to afford a circumstance favorably disposing of the question in the particular case. The evident object of the special provision is a beneficent one, namely, to supply the immediate necessities of the people with an article of subsistence easily and cheaply procured. And this consideration may go far toward solving the question.

Whatever doubt there may be, however, from want of comprehension in the language used must be solved in favor of the importer and consumer, for taxes are never to be assessed on a doubtful interpretation of the law.

I conclude with the remark that no precise rule can be laid down which limits the quantity of the fish imported or the time in which the fish are to be consumed. The evident purpose, the character of the article, and the circumstances alone must be considered as governing the customs officer.

Very respectfully,

A. McCUE, *Solicitor.*

The SECRETARY OF THE TREASURY.

J. G. M. C. 15. 13856. }
D. 147-49. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., September 10, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: The subject of the free importation of fresh fish for immediate consumption (T. I., new, 699) has been carefully considered by the Department with a view to securing uniformity in the practice thereunder at the several ports on the northern frontier.

Referring to your letter of April 29th last, reporting the practice at your port in such cases, I have to state that it appears from a report received from the collector of customs at Detroit (copy herewith) that the limitation of 500 pounds, as established at his port, applies only to herring, larger quantities of which, when imported at his port, are presumed to be intended for salting or preserving, as they cannot be disposed of for immediate consumption. The reasons governing his action would appear to be sufficient at his port, but may or may not be equally applicable at ports in your district or elsewhere on the northern frontier.

The same is true regarding the rule at that port admitting whitefish and trout to free entry when imported in "*any quantities.*" No positive rule can be established for the guidance of customs officers at the several ports. They must in each instance be governed by the facts surrounding the importation and the practice of importers at their particular port.

The Department, however, is of the opinion that where fish cannot be utilized in the quantities imported for food purposes without salting or some process of preserving which will take from them their distinctive character as "fresh fish," duty should be assessed. In such condition they are not fish fresh for immediate consumption under paragraph 699 of the free list, but are foreign-caught fish * * * fresh, * * * within the meaning of T. I., new, 280.

In other cases, customs officers must be governed as stated by the facts surrounding the particular importation, but it is suggested that in assessing duty in such cases care should be taken to make the practice correspond as near as possible at the several ports.

Their process of preparing the fish is to store them in rooms which are kept at low temperature by galvanized iron pipes which are filled with salt and ice. This mode of freezing is not patented, and is an invention of their own.

They operate at Mangaree Harbor, Cape Breton, and they wish to be informed whether fish prepared in this manner will be liable to a duty of one-half a cent per pound, the same as those prepared or frozen by patent process in Canada.

I would respectfully ask for the decision of the Department in relation to this matter.

Very respectfully,

D. F. DAVIS,
Collector.

Hon. SECRETARY OF THE TREASURY,
Washington, D. C.

J. G. M.—C 16-919. } TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
D 147-440. } *Washington, D. C., October 28, 1886.*

COLLECTOR OF CUSTOMS,
Bangor, Me.

SIR: In reply to your letter of the 19th instant, relative to the dutiable character of fresh fish frozen by a new unpatented process which it is proposed to import at your port from Cape Breton, you are referred to Department's decision of the 10th ultimo (S. 7746), in which it is stated that customs officers must be governed by the facts surrounding each particular importation, but that, as a general rule, fish which are to be consumed in the condition as caught, without salting or preserving, may be considered as falling within the provisions of paragraph 699 for "fish, fresh, for immediate consumption."

The fact that these fish are to be frozen by a process different from the patent process heretofore in vogue would not seem to affect their dutiable character. Frozen fish which have been intentionally frozen in order to preserve them have been heretofore held to be subject to duty—see Department's decisions of January 3, 1877 (S. 3062) and June 27, 1877 (S. 3280)—the United States circuit court, in its decision therein cited, having expressed the opinion that such fish, while undoubtedly fresh, could not be considered as intended for immediate consumption.

This rule would seem to apply to the fish covered by your letter of inquiry.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

No. 65 WALL STREET,
New York, November 5, 1886.

Hon. DANIEL MANNING,
Secretary of the Treasury, Washington, D. C.:

SIR: As attorneys for several importers of fresh fish, we desire to be informed, if not inconsistent with the practice of your Department, of your decision touching the matters hereinafter referred to.

A large fleet of American fishing schooners leave Gloucester, Mass., early in December and rendezvous at the fishing grounds in open sea off Fortune Bay, Newfoundland, to catch herring. The crews are employed in catching the fish, and the master, if opportunity offers, purchases from the fishing yawls surrounding the fleet. The temperature ranges about 20 degrees below zero, and the fish as they are caught are allowed to remain on the deck, and in a short time are frozen stiff, and at nightfall are shoveled into the hold. As soon as about 700 barrels *in bulk* of these "fresh frozen herring" are on board, the schooners leave perchance for this port, where the fish is immediately unloaded and sold to hucksters for about 2 to 3 cents per pound.

We have given you above an account of how the "fresh frozen herring" are caught and brought to this market, and we desire to be informed if you do not consider these fresh frozen herring "*fish fresh for immediate consumption*," and as such *free of duty*.

Your Department has lately made several decisions as to fresh fish, and the trade are naturally somewhat nervous. They have been for many years past admitted to free entry. Do you know of any reason why they should be deemed dutiable?

Thanking you in anticipation, we are sir,

Your obedient servants, &c.

R. J. GODWIN & SONS,
65 Wall Street, New York.

The case seems to be one where the Department should issue positive instructions to collectors on the northern frontier

I might say further that the principal importations at this time in this district are in small lots at outlying ports, whence they are shipped to Davis & Co., Detroit, who place them in refrigerator cars for shipment to the principal cities.

I construe your letter as answering the inquiry upon the same subject contained in my letter of September 9, 1886.

Very respectfully,

CHAS. A. WARD,
Collector.

J. G. M. C. 15. 14665. }
D. 147-200. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., October 1, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: The Department duly received your letter of the 16th ultimo relative to a variance existing between the practice at the port of Detroit and that hitherto in vogue at your port regarding the importation of whitefish and trout in a fresh state, and for immediate consumption.

The Department is unable to give any more positive instructions than were contained in its letter of the 10th ultimo, the concluding paragraph of which states that as a general rule fish which are to be consumed in the condition as caught, without salting or preserving, may be considered as falling within the provisions of paragraph 699, T. I., new.

This rule, as indicating the more recent views of the Department, must be considered as modifying all other rulings and former decisions which may appear to be in conflict therewith.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

LUBEC, *October 5, 1886.*

HON. THOMAS F. BAYARD:

DEAR SIR: I write to you for information in regard to our fish law. I wish to know whether herring caught in Canadian waters and brought to the lines in Canadian boats, then transferred from Canadian boats to American boats on the lines, exempts them from duties. These are fresh I name. Please inform me soon as you can.

Yours, truly,

T. C. ALLEN.

J. G. M. B. 12. 6834. }
D. 148-215. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., October 13, 1886.

Mr. T. C. ALLEN,
Lubec, Maine:

SIR: In reply to your letter of the 5th instant, relative to the dutiable character of herring caught in Canadian waters and brought to the lines in Canadian boats and there transferred to American boats, you are referred to the collector at Eastport, Me., who will furnish you the desired information, it being the rule of the Department not to pass upon questions of this character except when presented by protest and appeal from the action of the collector on bona fide importations.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

CUSTOM-HOUSE, BANGOR, ME.,
Collector's Office, October 19, 1886.

SIR: Messrs. Abbott Brothers, of Dexter, in the State, are engaged, or are about to engage, in the business of importing into the United States fresh fish of different kinds in a frozen state.

As a general rule, fish which are to be consumed in the condition as caught, without salting or preserving, may be considered as falling within the provisions of paragraph 699.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 15. 13858. }
D. 147-48. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., September 10, 1886.

COLLECTOR OF CUSTOMS,
Marquette, Mich.:

SIR: Enclosed please find copy of a letter addressed to the collector at Port Huron, respecting the classification for duty of importations of so-called "fresh fish for immediate consumption."

I will thank you to have the customs officials at Sault Ste. Marie and other ports in your district instructed to conform the practice at their ports, so far as possible, to the views therein expressed.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

J. G. M. C. 15. 13927. }
D. 147-85. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., September 15, 1886.

COLLECTOR OF CUSTOMS,
Port Huron, Mich.:

SIR: In reply to your letter of the 9th instant, relative to the dutiable character of fresh fish, the produce of fisheries upon the Canadian banks of the St. Clair River, you are informed that, under Department's decision of June 17, 1885 (S. 6969), such fish, when caught by American citizens, are entitled to free entry as the produce of American fisheries (T. I., new, 749).

No other or further rule for your guidance in the matter of the classification of fresh fish for immediate consumption, when imported by others than American citizens, can be given than is contained in Department's instructions to you of the 9th instant. (See par. 5, Cir. No. 124, Sept. 11.)

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

CUSTOM-HOUSE, PORT HURON, MICH.,
Collector's Office, September 16, 1886.

SECRETARY OF THE TREASURY,
Washington, D. C.:

SIR: I have the honor to acknowledge receipt of Department letter (J. G. M.), dated September 10, 1886, inclosing letter received from the collector at Detroit upon the subject of free importations of fresh fish for immediate consumption, the object of the communication being to secure uniformity of practice thereunder at the several ports on the northern frontier.

In reply, I have to state that the practice at this port and at Detroit appears to be the same so far as affects the importation of herring, viz, to permit free importations, for reasons stated, of any quantity not exceeding 500 pounds.

But, contrary to the practice of my predecessor here, the collector at Detroit permits free entry upon proper oath of any quantity of white fish or trout, upon the ground that these fish are more valuable in a fresh state, and therefore not likely to be disposed of in any other condition.

He further states that they are imported in large ice-boxes, placed in refrigerator cars and shipped to all parts of the country, and he considers fish so preserved and shipped to New York, and sold on the markets there, to be as much "fresh fish for immediate consumption" as if retailed on the streets of Detroit.

I fail to find any *regulations* to sustain this opinion. On the contrary, S. S. 3062 and 3181, directed to the collector at Detroit, as well as S. 5729, seem to me to preclude such idea.

J. G. M. }
D 148-421. }

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., November 18, 1886.

Messrs. R. J. GODWIN & SONS,
No. 65 Wall Street, New York, N. Y.:

GENTLEMEN: In reply to your letter of the 5th instant, in which you enquire as to the dutiable character of herring, which may be brought to American ports in American fishing schooners in a frozen condition, the result of the fish having been left over night on deck, I have to state that the Department does not make a practice of answering hypothetical questions of this character.

I enclose, however, a copy of Department's decisions of September 10, 1886 (S. 7746), and invite your attention to the last paragraph thereof.

The circumstances surrounding each importation will have to be taken into consideration by the collectors at the ports of arrival, but the fact that fish are frozen is not sufficient in itself to make them dutiable if the other circumstances surrounding the importation are sufficient to establish the fact that they are imported fresh for immediate consumption (see S. 7837).

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

APPENDIX B.

WHAT ARE AMERICAN FISHERIES ?

No. 1.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., August 13, 1873.

COLLECTOR OF CUSTOMS,
Salem, Mass. :

SIR: In reply to your letters of the 8th and 9th instant, requesting instructions in regard of the dutiable character of the cargo of the American fishing schooner Isaac Rich, which cleared from your port on the 21st of April last, I have to say that the portion of the fish caught by the crew of said vessel or by men employed by the captain for that purpose, as well as the oil extracted therefrom, is free of duty under the act of March 2, 1861, which exempts from duty "Oil, spermaceti whale and other fish of American fisheries, and all other articles the produce of such fisheries." The herring and other portion of the cargo *purchased* by the captain, and not caught by men employed by the captain for that purpose, cannot be considered as the produce of American fisheries, and are therefore not exempt from duty; neither is the salt used in curing the same exempt from duty, as said herring, &c., where not taken by a vessel licensed to engage in the fisheries.

A copy of this letter will be sent to the collector at Boston, where the salt was withdrawn, for his information.

I am, very respectfully,

WM. A. RICHARDSON,
Secretary.

No. 2.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., June 21, 1876.

Hon. T. W. FERRY,
President of the Senate :

SIR: I have the honor to acknowledge the receipt of your letter of the 26th ultimo, inclosing a communication from John O'Malley, of La Pointe, Wis., making the following inquiries in regard to American vessels fishing upon Lake Superior, viz:

(1) Can an American vessel engaged in fishing upon the northern shores of Lake Superior, in Canadian waters, with American twine and American labor, salt the fish upon the vessel and bring them into the United States free of duty?

(2) Does an American vessel engaged in fishing or the coasting trade, on clearing for a Canadian port become liable to tonnage tax?

In reply to the first question I have to state that neither the treaty of Washington nor any other treaty with Great Britain authorizes American fishermen to fish upon the northern shores of Lake Superior, or provide that fish there caught shall be entitled to free entry into the United States.

Such fish, however, caught by permission of the Canadian Government, express or implied, on American vessels and salted therein, would be duty free on entry under the provision in section 2505 of the Revised Statutes for "the produce of American fisheries," and the decision of the Department contained in a letter to the collector of customs at Boston under date of the 22d of January, 1869, to the following effect: "If foreign salt is used *without the limits of the United States* in curing fish of American catch, the fish are not thereby rendered dutiable, nor is the salt so used liable to duty.

"If salt purchased abroad for the curing of fish is not consumed in the curing, but is brought into an American port, the salt would then be liable to duty, but the *fish of American catch*, cured with such foreign salt, before importation, are free of duty."

To the second question I answer that a vessel engaged in fishing or the coasting trade does not become liable to tonnage tax on *clearing* for a foreign port.

But a coasting vessel so clearing *directly*, or a vessel entering a Canadian port on the lakes during a fishing voyage, would be required to pay the tax *on her return* to the United States, provided it had not been paid within a year.

I have the honor to be, sir, your obedient servant,

CHARLES F. CONANT,
Acting Secretary.

No. 3.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., May 15, 1877.

COLLECTOR OF CUSTOMS,
Boston, Mass. :

SIR: The question has arisen in regard to what proof is accepted by collectors of customs to show that oil and bone, claimed to be the products of American fisheries, are really such products, when brought into American ports by vessels other than those employed in the catch.

Vessels entering Saint Lawrence Bay, on the Siberian coast, laden with the products of American fisheries, there transship their cargoes to other vessels. There is no consular officer and no American citizen resident there. It is proposed to have the captain and mate of the vessel actually catching the cargo certify upon the transshipment the facts in the case, and the question is whether such certificate can be properly accepted as conclusive.

I will thank you to report your views in regard thereto at an early date.

Respectfully,

H. F. FRENCH,
Assistant Secretary.

No. 4.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., September 1, 1877.

COLLECTOR OF CUSTOMS,
San Francisco, Cal. :

SIR: I inclose herewith a copy of a letter dated the 30th ultimo from Mr. J. M. Bartlett, stating that certain cargoes consisting of the products of American fisheries are expected to arrive at your port.

The following telegram has been sent to you to-day in regard to the matter:

"Allow free entry of merchandise per barks Legal Tender and Jenny Pitts, if satisfied it is product of American fisheries, and that regulation evidence is unattainable."

The application is favorably indorsed by the collector of customs at New Bedford, and the parties concerned propose to furnish evidence substantially complying with that required by circular of the 13th of June last.

Should there, in your opinion, be any good reason why free entry of the merchandise should not be allowed, you will please report the fact to the Department.

Very respectfully,

H. F. FRENCH,
Assistant Secretary.

No. 4½.

OFFICE OF THE SECRETARY,
Washington, D. C., April 20, 1878.

Hon. T. W. FERRY,
United States Senate:

SIR: I have the honor to acknowledge the receipt of your letter, dated the 15th instant, inquiring whether a citizen of Michigan engaged in fishing in Lake Superior can cure his fish upon Canadian soil, and afterwards send them to the United States upon steamers plying between the United States and Canada.

The right to cure fish on a foreign shore in certain cases is recognized by the treaty of Washington, and such curing would not be considered by this Department as depriving fish of their right to free entry as the produce of American fisheries under section 2505 of the Revised Statutes.

The free entry of the produce of American fisheries brought into the United States from a foreign place, in a vessel other than the one in which the fish were taken, is authorized by the Regulations of this Department, of which a copy is inclosed herewith, for your further information.

Fish caught, cured, and imported as you describe may therefore be admitted to free entry if, as is presumed to be the case, they were taken in a vessel enrolled and licensed for the foreign and coasting trade on the northern, northeastern, and northwestern frontiers.

Very respectfully,

JOHN SHERMAN,
Secretary.

No. 5.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., May, 14, 1878.

Capt. H. M. NICHOLS,
Chelsea, Mass.:

SIR: The Department is in receipt of your letter of the 6th instant, stating that you propose to fit out a vessel to engage in taking turtle in the Gulf of Mexico, and inquiring whether turtle so taken would be subject to duty on importation into the United States.

In reply you are informed that the free list of the Revised Statutes exempts from duty spermaceti, whale, and other fish oil of American fisheries and all other articles the produce of such fisheries.

Turtles caught by vessels properly documented under the laws of the United States would be regarded by this Department as the produce of American fisheries, and therefore free of duty.

Very respectfully,

JOHN SHERMAN,
Secretary.

No. 6.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., November 7, 1878.

COLLECTOR OF CUSTOMS,
Duluth, Minn.:

SIR: This Department is in receipt of a communication from Special Agent John Douglass, stating that fish caught by United States fishermen in United States vessels will be imported at your port from Prince Arthur's Landing, Canada, in steamers, and their free entry requested. He therefore inquires—

- (1) Whether vessels of 25 feet in length may engage in the business?
- (2) What proof is necessary that the fish were caught in American vessels, there being no United States consular officer at Prince Arthur's Landing?
- (3) Whether, if the fish are cured with foreign salt, they may be admitted free?

The Department has to state: (1) that if the vessel is properly documented as a vessel of the United States her length is not material; that if not so documented the fish would be dutiable; (2) that the proof necessary that the fish were caught in a vessel of the United States is specified in the inclosed circular of the Department, dated the 13th of June, 1877; and (3) that the fact of the fish being cured with foreign salt will not render them subject to duty.

* * * * *

Very respectfully,
By order:

H. F. FRENCH,
Assistant Secretary.

No. 7.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., Febrary 5, 1880.

COLLECTOR OF CUSTOMS,
Eastport, Me.:

SIR: The Department is in receipt of your letter of the 25th ultimo, in which you inquire whether lobsters caught in Canadian waters by fishermen on board an American vessel licensed for the fisheries may be cured in domestic tin cans on board the vessel and brought to the United States free of duty.

In reply you are informed that, in the opinion of the Department, neither the shell-fish nor the packages in question would be subject to duty under any provision of law

Very respectfully,
By order:

H. F. FRENCH,
Assistant Secretary.

No. 8.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., January 20, 1882.

COLLECTOR OF CUSTOMS,
Boston, Mass.:

SIR: The Department has duly considered the appeal (7648 *g*) of Messrs. Wendell & Phillips from your assessment of duty at the rate of one dollar per barrel on 132 barrels of herring imported into your port from St. Pierre, Miquelon. The appellants claim that the fish in question were caught in Fortune Bay, Newfoundland.

The only evidence in support of the claim that the herring were the product of the Newfoundland fisheries consists of memoranda on a certificate from the foreign customs officer that the fish were of English catch.

This evidence is not satisfactory to the Department.

It must be made to appear by competent evidence from Newfoundland by what vessel the fish were caught and what her nationality was. Also that the fish were the produce of the fisheries of the colony of Newfoundland, by which term is meant fisheries carried on by the people of that colony, or by persons authorized by its laws.

Sixty days from date will be given to the appellants to produce the desired proof. If not produced within that time, your assessment of duty will stand affirmed.

Very respectfully,

H. F. FRENCH,
Acting Secretary.

No. 9.

DEPARTMENT OF JUSTICE,
OFFICE OF THE SOLICITOR OF THE TREASURY,
Washington, D. C., June 10, 1885.

SIR: I have the honor to acknowledge the receipt of your letter of the 5th instant, requesting my opinion as to the questions presented by the collector at Eastport, viz:

1. After July 1 next, when the treaty with Great Britain of May 8, 1871, shall have terminated, will fresh fish caught in foreign waters in open boats of less than five tons burden owned and manned by citizens of the United States be free of duty, under paragraph 749 of the tariff act of 1883?

2. Will fresh fish taken from weirs in foreign waters by boats of the class referred to be free of duty under that paragraph?

It is provided by the act aforesaid that the following articles when imported shall be exempt from duty: * * * "Oil, spermaceti, whale, and other fish oils of American fisheries, and all other articles the produce of such fisheries."

I understand the term American fisheries, as used in the paragraph cited, to characterize those carried on by citizens of the United States.

It may be remarked that vessels of less than five tons burden engaged in the occupation, if unlicensed, are not subject to the penalties of this statute.

Whether the first are taken from weirs along the shore or caught in the open sea, I think they are equally the product of American fisheries if so taken by American citizens engaged in the business.

Accordingly, I answer the inquiries of the collector in the affirmative.

Very respectfully,

A. McCUE,
Solicitor of the Treasury.

Hon. DANIEL MANNING,
Secretary of the Treasury.

CUSTOM-HOUSE, GLOUCESTER, MASS.,
Collector's Office, December 7, 1886.

HON. SECRETARY OF TREASURY,
Washington, D. C.:

SIR: The schooner Arthur D. Story, which sailed from this port, under a register, bound on a fishing voyage to the western coast of Newfoundland, has returned with a cargo of salt herrings. The vessel carried salt, barrels, some nets, and part of a crew. Seven men and nets were hired in Newfoundland to assist in catching the cargo. I am of the opinion that the fish, having been salted on board an American vessel, with American salt, became the product of the American fisheries, and as such should be admitted duty free, and I think was so decided by Secretary McCulloch in 1867, 1868, or 1869; but finding no decision to that effect on record in this office, I have assessed duty, subject to your decision, which the owners have paid under protest.

I am, very respectfully, yours,

D. S. PRESSON,
Collector.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., December 18, 1886.

COLLECTOR OF CUSTOMS,
Gloucester, Mass.:

SIR: In reply to your letter of the 7th instant, asking whether fish brought into your port by the schooner Arthur D. Story, which sailed from your port on a fishing voyage to the western coast of Newfoundland, and has returned thence with a cargo which had been taken by the crew of the vessel, with the assistance of men and nets hired in Newfoundland for that purpose, would be free of duty, you are informed that such fish, having been taken by an American vessel licensed for the fisheries, are entitled to entry free of duty as the produce of American fisheries, under T. I. new 749, and the principles enunciated in Department's decisions of February 9, 1869 (S. 353), August 13, 1873 (copy herewith), and February 28, 1877 (S. 3131).

Respectfully, yours,

C. S. FAIRCHILD,
Assistant Secretary.

APPENDIX C.

DUTIES COLLECTED ON FISH.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., December 13, 1886.

SIR: Please prepare for me, at your earliest convenience, a statement showing the sum of money collected as duties on fish (discriminating between fresh and not fresh), at each Atlantic port, each year during the five years before 1854; for each year during the term of the reciprocity treaty of 1854; for each year during the period between the termination of that treaty and the beginning of the treaty of Washington, in 1871; for each year during the term of the treaty of Washington, and also for the year 1886, caught in North Atlantic or on Canadian or Newfoundland coasts and imported in foreign vessels, specifying the kind of fish.

Respectfully, yours,

DANIEL MANNING,
Secretary.

Hon. WILLIAM F. SWITZLER,
Chief of Bureau of Statistics.

TREASURY DEPARTMENT,
BUREAU OF STATISTICS,
Washington, D. C., December 17, 1886.

Hon. DANIEL MANNING,
Secretary of the Treasury:

DEAR SIR: I have the honor to acknowledge the receipt of your letter of the 13th instant, asking for the amounts of duty collected on imports of fish caught in North Atlantic or on Canadian or Newfoundland coasts, with the following distinctions:

(1) Discriminating as to the amounts of duty collected on imports of fish fresh and fish not fresh.

(2) Distinguishing as to the amounts of duty collected on each kind of fish imported at Atlantic ports each year.

(3) Specifying the duties collected on each kind of fish imported in foreign vessels each year.

PERIODS COVERED BY RECIPROCITY TREATIES.

The period covered by your inquiry extends from 1850 to 1886, inclusive. During this time there were two reciprocity treaties between this country and Canada: First, that of 1854, proclaimed September 11 of that year, and terminated March 17, 1866; second, the treaty of 1873, proclaimed July 1 of that year, and terminated June 30, 1885. It will be observed that a portion of the fiscal years 1855 and 1867 is embraced within the provisions of the reciprocity treaties.

AS TO THE WATERS WHERE IMPORTED FISH ARE CAUGHT.

(1) Referring to the branch of your inquiry as to the imports of fish caught in North Atlantic or on Canadian or Newfoundland coasts, I have to state that the records of this office furnish no information as to the waters in which imported fish are taken. Therefore, the statements furnished embrace the imports of fish from the British North American Possessions (excluding British Columbia when the imports therefrom have been separately shown in the records), as being the nearest approach to the information asked for.

MANNER IN WHICH RECORDS OF DUTIES COLLECTED ON IMPORTS HAVE BEEN KEPT.

(2) Prior to 1867 no complete records were kept of the amounts of duty collected on each article imported into the United States, nor have records been kept since that period as to the amount of duty collected on the *various articles* which are imported from *each country*, the accounts of duties collected on the respective articles imported being only kept so as to show the amount of duty collected on each article imported into the *whole country*.

To keep an account with respect to the duty collected on each article imported from each country would be a work of great magnitude. It has therefore been found necessary to estimate the amounts of duty received on the gross imports of fish of the various kinds imported from the above-named provinces. A portion of this imported fish is subsequently exported, but it is believed that the amount is inconsiderable.

AS TO DUTIES COLLECTED ON FRESH FISH.

(3) I am asked to discriminate in the statements furnished between the amounts of duty collected on fish fresh and fish not fresh. Since 1861 fresh fish imported for daily consumption has been free of duty. Just prior to that date it was dutiable at the rate of 15 per cent. ad valorem, but the records of the imports of fish prior to 1861 do not distinguish between the fresh and cured.

AS TO THE RECORDS OF IMPORTS BY CUSTOMS DISTRICTS.

(4) Inasmuch as the accounts of imports distinguish only as to the aggregate value of all imports brought into each district in American and foreign vessels, respectively, and not as to the value of the respective articles brought in American and in foreign vessels, the information as to the duty collected on fish imported in foreign vessels cannot be given.

STATEMENTS SUBMITTED.

(1) Table A shows the estimated amount of duty collected on imports of fish into the United States from the British North American Possessions during each year from 1850 to 1886, except when the reciprocity treaties of 1854 and 1873 were in force.

(2) Table B shows, by customs districts, the estimated amounts of duty collected on imports of fish into the United States from the British North American Possessions, other than British Columbia, during the year ending June 30, 1886.

REMARKS ON TABLES.

During the period of the reciprocity treaties, there being no duties collected on fish imported from the British North American Possessions, those years do not appear in the tables.

Probably a small portion of the herring and all of the sardines and anchovies should not be included in the tables, as a small portion of the former and perhaps all of the latter come from Europe through the British North American Possessions, but the amounts of duty collected thereon are inconsiderable, and would not materially affect any deductions drawn from the tables.

INFORMATION ASKED FOR NOT FURNISHED.

With respect to your inquiry as to the duty collected on imports into each port, Table B contains all the information that I can furnish at the present time. This information for prior years not being in printed form, it is necessary to compile it from the manuscript records, which is a tedious process. The information cannot be given from 1850 to 1855. Such of the records as antedate the organization of this Bureau, in 1866, are incomplete, having been kept in a careless manner and allowed in great part to go to destruction.

To collate similar information to that in Table B, from the manuscript records, for the period from 1866 to 1873, will require the work of several clerks for two or three weeks, as only those skilled in the accounts can work upon them. Possibly, however, the information here furnished may be deemed sufficient. If it is still desired that information similar to that in Table B be compiled for the years from 1866 to 1873, I will undertake the work and perform it as best I may with the limited clerical force I have fitted for the work.

The calls upon me from Senators and Representatives in Congress in regard to the tariff and other commercial subjects are very numerous and pressing at the present

time, when they are entering upon a tariff debate. In order to answer these calls it is necessary not only to keep up the current work of this office, but also to devote a large amount of labor to the preparation of the information asked for, all of which taxes my force to its utmost capacity.

Very respectfully,

WM. F. SWITZLER,
Chief of Bureau.

A.—Statement showing the estimated amount of duty collected on imports of fish into the United States from the British North American Possessions during each year from 1850 to 1886, except when the reciprocity treaties of 1854 and 1873 ratified between Great Britain and the United States were in force.

Year ending June 30—	FISH, DRIED, SMOKED, PICKLED, ETC.							
	Herring, pickled.	Mackerel.	Salmon, pickled.	OTHER.		Anchovies and sardines, packed in oil or otherwise.	All other, not elsewhere specified.	Fish of all kinds.
				Pickled, in barrels.	Not in barrels, sold by weight.			
1850 ..	\$6,142 80	\$67,061 80	\$16,904 00	\$7,438 80	\$8,985 20	.....	.....	\$106,532 60
1851 ..	8,695 20	109,698 60	17,117 40	12,479 60	4,860 00	.....	.....	152,850 80
1852 ..	11,991 20	65,522 60	19,305 20	8,478 20	10,954 60	.....	.....	116,251 80
1853 ..	29,931 40	65,843 20	18,858 40	17,380 80	37,075 80	.....	.....	169,089 60
1854 ..	26,257 40	94,183 20	18,615 40	22,591 20	17,169 00	.....	.....	178,816 20
1855 ..	20,398 20	85,451 40	16,570 00	14,533 40	24,479 20	.....	.....	161,432 20

[Treaty of 1854 in force from September 11, 1854, to March 17, 1866.]

1866 ..	2,070 00	1,062 00	1,464 00	9,588 00	5,255 95	\$323 00	.....	19,762 95
1867 ..	97,595 00	155,006 00	18,648 00	36,943 00	32,529 71	36 50	.....	340,758 21
1868 ..	54,301 00	83,310 00	19,539 00	21,282 00	38,940 09	65 00	.....	217,437 09
1869 ..	.....	.....	.....	.....	.....	.....	\$279,439 25	279,439 25
1870 ..	.....	.....	.....	.....	.....	.....	292,351 75	292,351 75
1871 ..	.....	.....	.....	.....	.....	.....	300,293 50	300,293 50
1872 ..	64,200 00	155,462 00	.....	.....	.....	383 00	\$88,940 25	308,985 25
1873 ..	53,039 00	179,396 00	.....	.....	.....	1,768 50	137,886 50	372,090 00

[Treaty of 1873 in force from July 1, 1873, to July 1, 1885.]

*1886 ..	51,263 00	101 778 00	9,064 00	.....	95,816 30	442 00	38,664 75	.....	297,028 05
Tota.	425,884 20	1,163,774 80	156,085 40	150,715 00	276,065 85	3,018 00	265,491 50	872,084 50	3,313,119 25

*Imports from British Columbia excluded.

B.—Statement showing, by customs districts, the estimated amount of duty collected on imports of fish into the United States from the British North American Possessions, other than British Columbia, during the year ending June 30, 1886.

[Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland, and Labrador.]

CUSTOMS DISTRICTS INTO WHICH IM- PORTED.	FISH SUBJECT TO DUTY.								
	Herring, pickled.	Mackerel.	Salmon, pickled.	OTHER.		Anchovies and sar- dines, packed in oil or otherwise.	All other, not else- where specified.	Fish of all kinds.*	Total duty.
				Pickled, in bar- rels.*	Not in barrels, sold by weight.				
<i>Atlantic ports (and Chicago).</i>									
New York, N. Y.	\$10, 477	\$25, 124	\$4, 298	.....	\$22, 170 00	.....	\$3, 515 75	.....	\$65, 584 75
Boston and Charlestown, Mass.	25, 777	65, 224	3, 556	.....	38, 300 80	.....	4, 992 75	.....	137, 850 55
Philadelphia, Pa.	45			.....		.....		.....	45 00
Baltimore, Md.		20	30	.....	1, 708 74	.....		.....	1, 758 74
Aroostook, Me.	114	2		.....	10 45	.....	7 50	.....	133 95
Bangor, Me.	4	7, 290	208	.....	1, 046 37	.....	2, 359 25	.....	10, 907 62
Barnstable, Mass. ....				.....	1, 232 00	.....		.....	1, 232 00
Chicago, Ill.	1, 732	996		.....	300 29	\$434 40		.....	3, 462 69
Gloucester, Mass. ....				.....	11, 207 30	.....		.....	11, 207 30
Machias, Me. ....				.....	9 52	.....		.....	9 52
Marblehead, Mass.	2			.....		.....		.....	2 00
Newark, N. J. ....				.....		.....	1 00	.....	1 00
Newburyport, Mass. ....				.....		.....	14 00	.....	14 00
Passamaquoddy, Me.	796	2, 436	190	.....	15, 346 75	.....	3, 139 25	.....	21, 908 00
Portland and Falmouth, Me.	1, 615			.....	4, 317 35	.....		.....	5, 932 35
Portsmouth, N. H. ....				.....	2 00	.....		.....	2 00
Richmond, Va.	2, 485			.....		.....		.....	2, 485 00
Saint John's, Fla. ....				.....		.....	6 75	.....	6 75
Stonington, Conn. ....				.....	4 18	.....	1 50	.....	5 68
Waldoborough, Me. ....				.....		.....	75	.....	75
Total.	43, 047	101, 092	8, 282	.....	95, 655 75	434 40	14, 038 50	.....	262, 549 65

[Quebec, Ontario, Manitoba, and the Northwest Territory.]

Northern border ports (except Chicago).....	8,216	686	782		160 55	7 60	24,626 25		34,478 40
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* Included in other classes.

APPENDIX D.

Tonnage of American fishing vessels over twenty tons, other than whale.

Period.	Year.	Tonnage.	Average for period.
Five years prior to treaty of 1854	1850	143,758	150,810
	1851	138,015	
	1852	175,205	
	1853	159,840	
	1854	137,235	
		754,053	
Twelve years embracing term of reciprocity treaty of 1854	1855	124,553	142,177
	1856	125,703	
	1857	132,901	
	1858	140,490	
	1859	147,647	
	1860	153,619	
	1861	182,106	
	1862	203,459	
	1863	157,579	
	1864	148,244	
	1865	100,436	
	1866	89,386	
		1,706,123	
Five years between reciprocity treaty and treaty of Washington.....	1867	68,207	72,730
	1868	74,763	
	1869	55,165	
	1870	82,612	
	1871	82,902	
		363,649	
Fourteen years embracing term of treaty of Washington	1872	87,403	74,889
	1873	99,542	
	1874	68,490	
	1875	68,703	
	1876	77,314	
	1877	79,678	
	1878	71,560	
	1879	66,543	
	1880	64,935	
	1881	66,365	
	1882	67,014	
	1883	84,322	
	1884	72,609	
	1885	73,975	
		1,048,453	
	1886	70,437	70,437

APPENDIX E.

No. 1.

[Circular.—Statistics of the Fisheries.—See Circular 177 of 1885.]

1886.
Department No. 63,
Bureau of Navigation. }

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., May 28, 1886.

To the collectors of customs and others :

It is represented to this Department by the Hon. Spencer F. Baird, Commissioner of Fish and Fisheries, that, in view of the questions arising as to the shaping and negotiating of a new fishery treaty with Great Britain, affecting colonial waters in North America, and for other reasons, it is desirable to have at hand, available for reference, full and accurate information regarding our fisheries.

A large percentage of the product of the fisheries of the United States is taken by vessels licensed for the fisheries or the coasting trade, and the owner or master in each case is thoroughly informed relative to the movements of the vessel and the quantity of fish, shell-fish, and other products obtained.

It is, therefore, directed that whenever the owner, master, or agent of any vessel of over five tons burden, engaged in the capture or transportation of any kind of fish, shell-fish, crustacæ, or other products of the seas, rivers, or lakes, shall present himself at the custom-house for the purpose of obtaining or renewing his marine papers, the collector or his deputy will question him regarding the information required by the blank appended hereto, and will fill out the blank for the details thus obtained and certify that it is correct. The statistics should include the period covered by the papers about to be surrendered.

On the first day of each month the collector will forward by mail all such blanks filled out during the preceding month, addressed to "The Commissioner of Fish and Fisheries, Washington, D. C."

Such additional copies of this circular as may be necessary for your use will be furnished by the Bureau of Navigation on requisition.

C. S. FAIRCHILD,
Acting Secretary.

TREASURY DEPARTMENT.

Statistics of the vessel fisheries of the United States, furnished by ————, collector of customs for the port of ————. Date of record, ————.

Name of vessel, ————; rig. ————; net tonnage, ————.

Present value of vessel, \$ ————; value of apparatus and outfit, \$ ————.

Hailing port, ————; fishing port, ————.

Period covered by papers about to be surrendered or renewed began ————, 188—, and ended ————, 188—.

Name of owner or agent, ————; P. O. address, ————.

Name of master, ————; P. O. address, ————.

Number of persons on vessel, as follows: American subjects (white), ————; American subjects (colored), ————; British provincials, ————; other foreigners, ————; total, ————.

Name separately all fisheries engaged in during period covered by papers mentioned above. ————.

Where fishing, and on what grounds. ————.

Kinds of apparatus used. ————.

Date of starting on first trip. ————.

Date of return from last trip. ————.

Total number of trips made. ————.

How long idle during period covered by last papers. ————.

Quantity of fish or other products taken during period covered by last papers, as follows:

Pounds sold fresh: Mackerel, ———; cod, ———; halibut, ———; herring, ———; haddock, ———; white-fish, ———; lake trout, ———; menhaden (bbls.), ———; other fish (specifying kinds and qualities), ———.

Pounds dry-salted or split for salting: Cod, ———; hake, ———; haddock, ———; pollack, ———; other fish (specifying kinds and qualities), ———.

Barrels, brine-salted (sea-packed): mackerel ———; sea-herring, ———; white-fish, (½ bbls.), ———; lake trout (½ bbls.), ———; lake herring (½ bbls.), ———; other fish, ———.

Bushels of shell-fish: Oysters taken, ———; oysters transported only, ———; clams taken, ———; clams transported only, ———; scallops, ———; other shell-fish, ———.

Number of lobsters: Lobsters taken, ———; lobsters transported, only ———.

Gallons of oil (specify kind and quantity), ———.

Miscellaneous products: Seal-skins, ———; sponges, ———; other products (specify kind and quantity), ———.

Total value of fish and other products taken, before deducting any expenses, \$———.

Disposition made of fish or other products (where landed), ———.

Estimate of pounds of above-named fish taken within three miles of the mainland or islands, as follows:

Mackerel, ———; cod, ———; hake, ———; haddock, ———; pollack, ———; herring, ———; menhaden (bbls.), ———; other fish, ———.

Total value of fish taken within three miles of the mainland or islands, \$———.

Has the vessel entered foreign waters for any purpose whatever during the above period? If so, please answer fully the questions on the following page; if not, they may be neglected.

Statistics of American fishing vessels entering foreign waters, especially those of Canada, Newfoundland, Iceland, or Greenland.

Name of vessel, ———; rig, ———; net tonnage, ———.

Number of weeks actually fishing in foreign waters, ———.

Where fishing, and on what grounds, ———.

Kind of apparatus used, ———.

Total quantity of fish or other products taken in foreign waters, as follows:

Pounds sold fresh: Mackerel, ———; herring, ———; cod, ———; halibut, ———; white-fish, ———; lake trout, ———; other fish, ———.

Pounds dry-salted: Cod, ———; hake, ———; haddock, ———; halibut, ———; other fish, ———.

Barrels brine-salted (sea-packed): Mackerel, ———; sea-herring, ———; white-fish (½-bbls.), ———; lake trout (½-bbls.), ———; lake herring (½-bbls.), ———; other fish, ———.

Other products (state kind and quantity), ———.

State fully the quantity of each kind taken within three miles of any land, and locality where taken, ———.

Total value of fish taken in foreign waters, \$———.

Value of portion taken within three miles of land, \$———.

Money paid to foreign merchants for ice, \$———; bait, \$———; supplies, \$———; gear, \$———; other expenditures and repairs, \$———.

Number of times entering foreign ports for shelter, repairs, bait, or supplies during period covered by last papers, ———.

PORT OF ———,
———, 188—.

I certify that the above information was obtained as prescribed by the circular of the Treasury Department dated December 16, 1885.

Collector of Customs.

No. 2.

[U. S. Commission of Fish and Fisheries. Spencer F. Baird, Commissioner.]

WASHINGTON, D. C., December 29, 1886.

SIR: Referring to your letter of the 16th instant, asking for information regarding the vessel fisheries of New England and of British North America, I take pleasure in forwarding herewith answers to the various questions propounded, with the exception of number five, which asks for the total tonnage of American vessels employed in the North Atlantic fisheries in 1886, the total number of men thereon, and the total

value of their catch. The compilations necessary for intelligent estimates in answer to this question are nearly completed, and the results will be forwarded at the earliest practicable moment.

Very respectfully yours,

SPENCER F. BAIRD,
Commissioner.

Hon. DANIEL MANNING,
Secretary of the Treasury.

No. 3.

Question 1. "What do you estimate to have been the value of the products of the British North American fisheries for 1885?"

The Canadian fisheries in 1885, as shown in detail by the accompanying tables, furnished occasional or continuous employment to 59,493 persons, with 1,177 vessels and 28,472 boats. The value of these, together with that of the other apparatus and capital, including shore property, gives a total of \$6,697,459 employed in the fisheries industries, with a total value of products amounting to \$17,722,973.18. The tables from which the summary is obtained have been compiled from the annual report of the Department of Fisheries, Dominion of Canada, for the year 1885.

In using the figures it should be remembered that the tables include not only the commercial fisheries, but also the persons, apparatus, and capital employed in fishing for local supply; and probably a large number who fish only to furnish food for their own families. This class, owing to the lack of manufacturing interests and the character of the soil, composes in many localities a large part of the population.

Total number of men and total amount of apparatus and capital employed in the shore, boat, and vessel fisheries of the Dominion of Canada during the year 1885.

[Compiled from the Annual Report of the Department of Fisheries of the Dominion of Canada for the year 1885.]

Provinces.	Number of men.	Steam-tugs and sail-vessels.		Boats.		Gill-nets.		Pound-nets, traps, and weirs.		Approximate value of factories, freezers, and other apparatus and fixtures.	Total amount of capital invested.
		Number.	Tonnage.	Value.	Number.	Value.	Fathoms.	Value.	Number.	Value.	
Nova Scotia	29,905	711	31,285	\$1,428,308	12,693	\$316,677	1,475,913	\$566,550	916	\$233,720	\$3,010,000
New Brunswick	10,185	196	3,297	78,836	4,879	147,567	430,738	241,360	232	112,690	1,075,879
Prince Edward Island	3,535	53	2,044	55,900	1,039	34,625	57,985	24,649	1	1,600	493,143
Quebec	11,322	160	8,734	340,679	7,949	187,320	207,268	160,423	2,011	126,048	930,358
Ontario	2,716	23	2,523	63,310	1,045	121,863	710,630	96,222	213	71,765	378,274
British Columbia	1,830	34	845	54,600	867	44,195	141,850	130,080	.....	.....	809,805
Total	59,493	1,177	48,728	2,021,633	28,472	852,257	3,014,384	1,219,284	3,373	545,823	6,697,459

Table showing the yield and value of the shore, boat, and vessel fisheries of the Dominion of Canada during the year 1885.

Compiled from the Annual Report of the Department of Fisheries of the Dominion of Canada for the year 1885.]

Fish and fish products.	Nova Scotia.		New Brunswick.		Quebec.		Prince Edward Island.		British Columbia.		Ontario.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Cod.....cwt.	806,426	\$3,427,311 25	83,298	\$354,016 50	164,529	\$658,116 00	22,891	\$97,288 00					1,077,144	\$4,536,731 75
Herring, pickled.....bbls.	207,160	828,640 00	109,717	438,868 00	53,542	244,115 00	46,937	187,748 00			a 59,706	\$298,530 00	477,062	1,997,901 00
Smoked.....boxes.	116,080	29,020 00	1,313,535	328,383 75	4,179	1,044 75	60	15 00	b 56,000	\$7,000 00			1,539,854	365,463 50
Frozen.....No.			15,800,150	94,800 90									15,800,150	94,800 90
Preserved or fresh.....lbs.	328,040	13,121 60											364,640	14,951 60
Lobsters, preserved.....lbs.	6,805,340	1,020,801 00	5,236,252	785,437 80	872,257	130,838 55	4,389,189	526,702 68	36,600	1,830 00			17,303,038	2,463,780 03
in shell or alive, &c.....tons	1,887	56,621 00	3,111	93,330 00									4,998	149,951 00
Salmon, pickled.....bbls.	3,428	61,704 00	191	3,438 00	739	7,390 00			3,486	31,212 00			7,826	103,744 00
Fresh.....No.									204,700	40,940 00			204,700	40,940 00
Fresh in ice.....lbs.	445,658	86,647 35	1,356,498	271,299 60	580,754	52,016 22	8,455	1,268 25					2,391,365	411,231 42
Preserved in cans.....lbs.	30,570	6,114 00	16,618	3,323 60	2,914	437 10			5,208,816	542,585 00			5,258,918	552,459 70
Smoked.....lbs.	27,465	5,493 00	6,900	1,380 00					370,000	37,000 00			404,365	43,873 00
Mackerel, preserved, in cans.....lbs.	10,656	1,598 40	135,616	20,342 40			393,462	39,346 20					539,734	61,287 00
Mackerel, pickled.....bbls.	108,136	1,081,365 00	10,845	108,450 00	2,347	14,082 00	24,424	244,240 00					145,752	1,448,137 00
Haddock.....cwt.	170,026	596,999 00	17,587	61,554 50	694	2,776 00	833	4,998 36	(c)	(c)			185,330	666,327 86
Hake.....cwt.	(b)	(b)	41,124	143,934 00			14,520	50,820 00					55,644	194,754 00
Pollock.....cwt.	49,098	171,843 00	16,192	56,672 00									65,290	228,515 00
Trout.....lbs.	128,075	7,684 50	70,980	4,258 80	593,820	42,263 20	71,120	4,267 20	83,000	5,810 00	4,598,454	367,876 32	5,545,449	432,160 02
Do.....bbls.					139	1,112 00					4,166	41,660 00	4,305	42,772 00
Whitefish.....lbs.					50,060	4,004 80					2,867,500	229,400 00	2,917,560	233,404 80
Do.....bbls.											5,355	53,550 00	5,355	53,550 00
Smelts.....lbs.	418,150	25,089 00	5,497,858	329,871 48	8,850	619 50	57,500	3,450 00					5,982,358	359,029 98
Sardines.....bbls.					6,857	20,571 00							6,857	20,571 00
Do.....hhds.			55,860	335,160 00									55,860	335,160 00
Hake sounds.....lbs.	58,090	58,090 00	48,577	48,577 00			(e)	(e)					106,667	106,667 00
Shad.....No.					143,200	13,645 30	20	12 00					143,220	13,657 30
Do.....bbls.	4,919	39,357 60	9,616	96,160 00									14,535	135,517 60

Sturgeon	lbs.	1,491,987	.....	89,519 22	.....	26,240	1,574 40	532,400	26,620 00	.....	6,770	.....	406 20	.....	354,500	17,725 00	1,459,035	72,951 75	2,372,175	118,871 15
Halibut	lbs.	.....	.....	.....	.....	47,360	2,841 60	30,890	1,848 00	.....	.....	.....	.....	.....	159,000	9,540 00	.....	.....	1,735,917	104,153 02
Seal skins	No.	.....	.....	.....	.....	.....	.....	9,195	9,195 00	.....	.....	.....	.....	.....	.....	150,019 00	.....	.....	.....	159,214 00
Oil	galls	495,320	.....	322,735 00	.....	98,142	58,885 20	142,740	71,370 00	12,493 00	19,220	.....	.....	.....	62,730	26,024 00	.....	.....	818,152	491,507 20
Miscellaneous primary and secondary products .....		.....	.....	354,168 95	.....	.....	362,871 76	.....	417,395 19	120,374 75	.....	.....	.....	.....	.....	208,353 00	.....	278,723 70	.....	1,741,887 35
Total .....		.....	.....	8,283,922 87	.....	.....	4,005,431 29	.....	1,719,459 61	1,293,429 64	.....	.....	.....	.....	.....	1,078,038 00	.....	1,342,691 77	.....	17,722,973 18

a Lake herring.*b* Pounds.*c* In British Columbia, 341,160 haddock and whiting, valued at \$12,058, are included with miscellaneous products.*d* In Nova Scotia the hake are included with the haddock.*e* In Prince Edward Island, 16,888 pounds of cod and hake sounds, valued at \$10 977.20, are included with miscellaneous products.

Question 2. "What are the descriptions of the fish—in consequence of the present habits of the fish, the present methods of catching, drying, curing, and preserving—American fishermen desire to take either in the jurisdictional waters of British North America, or in the open sea or open bays near the British colonial possessions?"

Prior to, and during the first half of the present century, many of the New England vessels engaged in the offshore cod fisheries, being of small size, found it desirable to fish in the vicinity of the shore, where they could make a harbor in case of severe storms. Owing to their small tonnage, they found it difficult to carry sufficient quantities of codfish to make a trip to the more distant fishing grounds profitable, and many of them found it desirable to land and dry their fish upon the shores, thus enabling them to bring home a much larger quantity as a result of the voyage. At that time the majority of the fish were exported to Spain and the West Indies, and the methods which our fishermen found it necessary to adopt in drying their fish on the provincial shores made them especially adapted for these markets.

Since 1850 the small vessels engaged in the offshore fisheries have been gradually replaced by larger ones, and thus the privilege of fishing for cod in the vicinity of the shore has become less important, and as the codfish are more abundant on the offshore Banks, twenty to two hundred miles from land, vessels engaged in this fishery now prefer to visit these localities; and they have been doing so, with comparatively few exceptions, for the past fifteen or twenty years. The catch of these vessels, instead of being exported, is now to a great extent consumed in this country, and our market at present calls for fish cured in a different way, so that the privilege of drying and curing fish on Canadian soil, now that the vessels are large enough to readily carry the undried fish, is no longer of any advantage whatever to our fishermen.

Formerly vessels employed in the mackerel fisheries were provided only with hand-lines, and the crews caught the fish from the vessel's deck. When fishing in this way they found it desirable to grind up fish and clams, which they threw in large quantities into the water to attract the mackerel and keep them in the vicinity of the vessel. The best results were then obtained by fishing in shoal water, as the bait thrown overboard could not sink to any great depth, and the entire body of fish were thus kept near the surface, where they were within reach of the hook and line. About 1865 purse-seines were introduced for the capture of mackerel, and in a few years they came to be generally adopted by vessels employed in the mackerel fishery. These are fished to best advantage at some distance from the shore, and the fishermen usually avoid shoal water, as the seines are liable to be ruined when set in depths where the lead-lines may chance to come in contact with the bottom.

During earlier years the halibut fishery in the vicinity of provincial shores was of some slight importance to the American fishermen, but this has been confined wholly to deep water, many miles from land, since 1875.

The shore herring fisheries, and the occasional capture of certain species for bait, were also at one time of value to fishermen from the United States; but such a decided opposition on the part of the resident Provincial fishermen was manifest to the exercise of the privilege of taking fish, accorded by the treaty of Washington, that the practice of catching their own supply was practically abandoned, and the fishermen have almost without exception, since the well-known difficulty at Fortune Bay, Newfoundland, about ten years ago, purchased their cargoes of herring from the local fishermen, and, where these had no suitable apparatus for obtaining same, have carried their own apparatus and hired the provincial fishermen to manipulate it.

The mackerel is, then, the only species of any importance visiting Provincial waters which American fishermen at present desire to catch within three miles of the shore, or indeed within a much greater distance. This is practically the only Provincial shore fishery in which our fishermen have had any considerable interest since the ratification of the treaty of Washington, as the great majority of our vessels employed in other fisheries on the banks off the Provincial coast seldom fish nearer than twenty-five or thirty miles from land, and a majority of them secure their cargoes from one to two hundred miles from shore.

At the present time the advantage to be derived from any privilege of fishing within three miles of the Canadian coasts even for mackerel is comparatively insignificant, as the results of the season which has just closed show conclusively that our vessels which have fished wholly outside of the three-mile limit have done fully as well as the Canadian vessels, which have had the opportunity of fishing everywhere, without restriction as to distance from shore.

Question 3. In the method of fishing on that open sea, or in those open bays, of preserving the catch and sending it to our ports for a market now desirable for our American fishermen, of what importance is the right to enter, in a commercial way, British colonial ports in the neighborhood?

The nature of the occupation of fishing, when the size of the vessel is considered, renders it impossible for a fishing vessel to provide against all contingencies. On leaving the home ports the vessels are ordinarily provided with what is supposed to

be a full outfit of provisions and apparatus, but a scarcity of fish may render it desirable that it should remain on the fishing-grounds longer than was expected, or it may be delayed by head winds, storms, or floating ice, until the supply of provisions or water is exhausted. It then becomes convenient, in order to prevent actual suffering, that the vessel should make a harbor and obtain additional quantities. Instances have occurred during the present year when vessels short of provisions have attempted to reach one of our own ports to obtain a supply rather than incur the risk of seizure by entering those of Canada for that purpose.

Again, portions of the vessel's equipment, such as anchors, cables, fishing boats, and apparatus of capture, are liable to be lost during stormy weather, and it is a great convenience to be able to purchase new material in the nearest provincial port rather than to incur the loss which must be sustained, provided the vessel is obliged to return to American markets to purchase same. This is true both in the fisheries carried on near the land and also in those on the more distant fishing grounds. This season much inconvenience was experienced by many of the vessels engaged in the mackerel fishery from the tearing of their seines and the loss of their seine boats in heavy weather, owing to the refusal of certain Canadian officials to allow them to land their seines for purposes of repair or to buy new boats for continuing their fishing operations. Many of them were provided with two boats and some carried two seines to guard against such contingencies, but in a number of cases vessels so equipped were equally inconvenienced with the others.

The only occasion that vessels would have for entering the harbor, due to the methods of preserving fish, would be for the purpose of obtaining either salt, barrels or ice. It sometimes happens that the salt is damaged by a leak in the vessel, or that a detention beyond the expected time causes the melting of the ice, and it is important that our fishermen should be permitted to purchase additional quantities in Canadian ports, rather than run the risk of losing the entire cargo of fish or of returning with only a partial trip. The present interpretation given to the treaty of 1818 by the Canadian authorities, while it might allow a leaking vessel to enter a port for repairs, would not allow it to replace the salt that might have been rendered worthless by the leak.

The privilege of landing cargoes of fish at provincial ports for shipment to the United States is of considerable importance to vessels engaged in the mackerel fishery, but of little value to those employed in the capture of other species. Vessels are thus enabled to land trips for shipment and to immediately resume their fishing operations, thus saving the two to four weeks necessary for making the homeward and return passage; but with the privilege of transshipping cargoes should be coupled that of refitting at the port where the fish are landed, otherwise the vessel might be short of provisions or apparatus, which would render it impossible for it to continue its fishing operations.

Most of the vessels from Gloucester, Mass., engaged in the offshore cod fisheries have made a practice of obtaining fresh bait in provincial ports; but a majority of vessels similarly employed from other places carry salt bait, thus being entirely independent of the Canadian supply. The chief difference between the two classes is that the Gloucester vessels fish with trawls, while the crews of most of the other vessels catch their fish with hand-lines. It is claimed by certain of the Gloucester fleet that they get more and larger fish by the use of fresh bait, but the fishermen from other ports have found their own methods profitable and have not felt disposed to follow Gloucester's example even when they had free access to Canadian ports for the purpose of obtaining bait.

A few of the vessel-owners in Gloucester have long maintained that the time lost in going to and from Provincial ports to secure bait, and the temporary demoralization of the crews resulting from a visit to these ports more than offset any advantages that are to be derived by the use of fresh bait, and urge that salt bait would be found, on the whole, more profitable; but as a considerable percentage of the men employed on the vessels have families or relatives in the Provinces they have continued to urge upon the owners the necessity of obtaining bait in these localities, and it has been difficult to dissuade them. After the experience of the present year quite a number of other Gloucester owners and fishermen as well are convinced that it is on the whole better to substitute salt bait than to continue the old practice of leaving the Banks in the midst of the fishing season to obtain other kinds in the Provinces. That this opinion is shared by the Nova Scotia fishermen is proven by the fact that for some years they have been in the habit of purchasing large quantities of salt clams from dealers at Portland and other towns in the State of Maine to be used by them in the cod-fisheries.

Since the introduction of the purse-seine the mackerel fishermen have required no bait.

In the halibut fishery it is only necessary to take a sufficient quantity to last one or two days, as the remainder of the catch can be obtained on refuse fish taken on the trawls with the halibut, or, if necessary, small halibut can be cut up and used for baiting the hooks.

In the past the cod-fishermen frequenting Georges Banks have at certain seasons of the year obtained their bait from Canadian ports, but the experience of the present year has proven that they are not dependent upon them, as most of the vessels have obtained their supply on our own coast with comparatively little difficulty, and frequently with less loss of time than was customary when visiting localities in New Brunswick and Nova Scotia.

It will thus be seen that, though the privilege of obtaining bait and the ice necessary for preserving it in British North American ports has been in the past and may even still be considered a convenience to certain classes of vessels, it is not of vital importance.

The agitation of the question of bait supply has had a very beneficial influence upon our own fishermen, and has resulted in the development of extensive shore bait fisheries along the coasts of Maine and Massachusetts, which give promise of being able to supply in large part, if not wholly, the demands of our entire fleet. During the past summer the experiment of shipping bait to Boston from the more remote localities on the coast of Maine has been made with success, and the cost of transportation is not high enough to be a barrier to the continuance of the business. If this practice increases, as at present seems probable, it will doubtless result in a great saving of time to our fleet, which has often in the past been seriously inconvenienced in its fishing operations, owing to the time consumed in sailing from port to port in search of a supply. The United States Fish Commission has recently begun a series of experiments with a view to determining the practicability of preserving fresh bait long enough to admit of its shipment from New England ports to the fleet fishing on the more distant banks, but the work is not yet sufficiently advanced to warrant an opinion as to the probable result.

Question 4. "The same question in regard to the fishing on the permitted coasts, and the commercial entry in the prohibited bays and harbors, but not for fishing."

There is at present comparatively little fishing by American vessels on that portion of the coast to which free access is given by the treaty of 1818; but vessels fishing in that vicinity should have the same privileges in other ports as are accorded to other vessels, as it would seem unwise to discriminate, and it would, perhaps, owing to the few settlements of any importance on the permitted coast, be more convenient for the vessels to enter ports in the prohibited districts to purchase the necessary articles than to go out of their way in an opposite direction, where there might be any uncertainty of securing them.

Question 5. "What is your estimate of the total tonnage of the American vessels, the number of fishermen thereon, engaged in the Canadian and North Atlantic fisheries in 1886, and the total value of their catch?"

A careful estimate of the extent and importance of our New England vessel fisheries, indicates that during the present year there have been 1,956 vessels, aggregating 115,130 tons, with crews numbering 17,996 men employed in the various sea fisheries. The fleet is estimated to have been divided as follows: 1,530 vessels in the food-fish fisheries, 215 in the shell-fish and lobster fisheries, 177 in the capture of whales and seals, and 34 in the menhaden fishery.

The 1,530 food-fish vessels aggregated 71,200 tons, and furnished employment to 14,240 men. The vessels, with their equipment, were valued at nearly \$5,000,000, and their catch is estimated to have sold at prices to fishermen for \$4,590,000. Of this fleet 350 sail were engaged in the off-shore mackerel fisheries, 200 in the cod fisheries on Quersan, Grand, and Western Banks, 165 others in the cod fisheries of George's and Brown's Banks, and the remaining 750 in the miscellaneous shore and off-shore fisheries.

The off-shore mackerel vessels are the only ones that have engaged to any extent in catching fish in the vicinity of waters under British jurisdiction. Of this fleet, about one-half, or possibly a slightly larger percentage, have fished in the Gulf of St. Lawrence during a portion of the mackerel season, the remainder of these vessels having remained off our own coast.

Below are given two tables, showing in detail the extent and character of our New England vessel fisheries in 1886. The figures as there explained are estimated from partial statistics furnished by collectors of customs on Treasury circular No. 63, Bureau of Navigation, and from special, but as yet unfinished, investigation by the United States Fish Commission. The statement in both tables are therefore subject to revision; but, as due allowance has been made for the statistics not yet received it is believed the totals will not be materially changed by the final compilations.

Table estimating by fisheries the total number, tonnage, and value of New England vessels employed in the North Atlantic food-fish fisheries in 1886, with the number of men and value of apparatus and outfit on same, and the total value of their catch.

[These estimates are based upon partial returns from collectors of customs on Treasury Circular No. 63, current series, and upon special investigations by the United States Fish Commission.]

Fisheries.	Number.	Tonnage.	Value.	Value of apparatus and outfit.	Number of men.	Value of catch.
Offshore mackerel fisheries	350	30, 000	\$1, 325, 000	\$520, 000	5, 500	\$875, 000
Codfisheries on Quereau, Grand, and Western Banks	200	16, 500	765, 000	330, 000	2, 800	990, 000
Codfisheries on George's and Brown's Banks	165	10, 000	640, 000	200, 000	2, 000	850, 000
Offshore halibut fisheries	65	5, 000	400, 000	110, 000	900	750, 000
Miscellaneous shore and offshore fisheries	750	9, 700	430, 000	260, 000	3, 040	1, 125, 000
Total	1, 530	71, 200	3, 560, 000	1, 420, 000	14, 240	4, 590, 000

Table estimating by fisheries the total number, tonnage, and value of New England vessels, with the number of men thereon, employed in the various fisheries in 1886.

[Based upon partial returns from collectors of customs on Treasury Circular No. 63, current series, and information obtained from other sources.]

State.	Total.				Food-fish.				Lobster and shellfish.				Whale and seal.				Menhaden.			
	Number.	Tonnage.	Value.	No. of men.	Number.	Tonnage.	Value.	No. of men.	Number.	Tonnage.	Value.	No. of men.	Number.	Tonnage.	Value.	No. of men.	Number.	Tonnage.	Value.	No. of men.
Maine	567	18,850	\$940,000	3,720	525	18,000	\$900,000	3,600	40	750	\$30,000	100	2	100	\$10,000	20	.....	.....	.....	.....
New Hampshire	20	600	30,000	120	20	600	30,000	120	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Massachusetts	1,025	86,850	4,008,000	12,540	850	50,000	2,500,000	10,000	15	850	8,000	40	160	36,000	1,500,000	2,500	.....	.....	.....	.....
Rhode Island	64	1,460	188,000	396	35	400	20,000	80	10	100	7,000	25	.....	.....	.....	.....	19	960	\$161,000	291
Connecticut	280	7,370	476,550	1,220	100	2,200	110,000	440	150	2,600	200,000	400	15	2,000	100,000	240	15	570	66,550	140
Total	1,956	115,130	5,642,550	17,996	1,530	71,200	3,560,000	14,210	215	4,300	245,000	565	177	38,100	1,610,000	2,760	34	1,530	227,550	431

Question 6. "What change has, in your view, come to American fisheries since the last full year of the Washington treaty in regard the character, quantity, and general features of that industry?"

There has been little change in the fisheries other than the mackerel fishery during the past year. In this fishery the scarcity of mackerel has been very marked and the catch has been much below that of the average year. The decrease, however, can be in no way attributed to the abrogation of the treaty of Washington, but must rather be accounted for by natural causes which have affected the abundance, movements, and locality of the species.

For several years prior to 1886 mackerel appeared in more than average quantities, and for eight or ten years, ending with 1885, they have been much more plentiful on our own coast than on any portion of that of British North America. For this reason the fleet of American mackerel vessels visiting waters in the vicinity of British territory has of late been very small. In 1885, out of a total of about 380,000 barrels caught by our fleet, only 26,000 barrels, or less than seven per cent., were taken in the vicinity of Canada, the quantity obtained within the three-mile limit being only 3,564 barrels. The fact that, during a season when permission had been given to allow American vessels to fish anywhere in the waters of British North America without restriction as to distance from shore, less than one per cent. of the catch of our mackerel fleet was secured within three miles of British territory, and that more than ninety-three per cent. of the total catch of mackerel was obtained in the vicinity of our own coast, is certainly significant.

During the present year mackerel have been peculiarly scarce in all localities, though for the first time in eight or ten years they have been more abundant in the Gulf of St. Lawrence than off the New England coast, and a large percentage of the American vessels employed in the fishery have visited that locality. The catch has, as a rule, been unusually small, but the price has increased in proportion, so that the season for some of the vessels has not been wholly unprofitable. The limited catch cannot in any way be accounted for by the restrictions placed upon our vessels within the three-mile limit, for their catch, as previously stated, has been equal to that of the Canadian vessels that fished without restriction as to distance from the shore.

The vessels engaged in the cod-fishery have met with more than average success. This is partially attributed to the fact that the squid, used for bait, have been very plenty during the summer and fall months on the fishing grounds. It has not unfrequently occurred that vessels have sailed without any bait, depending upon the supply that they could catch on the Banks upwards of a hundred miles from shore.

Question 7. "Your Commission has, in its annual reports, alluded to the diminished necessity on the part of American fishermen to go to British North American ports or waters for *bait*. What are the new features of that necessity?"

A few years ago the United States Fish Commission obtained from Norway a number of gill-nets suitable for catching codfish, and used them with success in the cod fisheries about Gloucester, Mass. Similar nets are now made in this country, and are extensively employed by the shore cod-fishermen of that vicinity, who obtain large catches by their use. These fishermen formerly depended in large part for their bait upon frozen herring, brought from New Brunswick and Newfoundland, but where gill-nets are used bait is no longer required. Thus far, however, gill-nets have not been extensively employed in the capture of codfish on the more distant fishing Banks.

The development of our shore bait fisheries, referred to in answer to a previous question, also renders our people less dependent upon the Provincial supply, and the growing sentiment upon the part of certain Gloucester owners in favor of substituting salt clams purchased in American markets for fresh bait obtained in the Provinces, seems destined to decrease still further our dependence upon the Canadian supply. It cannot be denied, however, that there are still a large number of vessels that would consider it a convenience to obtain bait in the Provinces, provided commercial privileges, under proper restrictions, are accorded to our vessels.

Question 8. "Your Commission has also alluded to inquiries presented by it in respect to the general value of the inshore Canadian waters to American fishermen, and the yearly value of the liberties given to American fishermen by the Washington treaty. Have you ascertained new facts of public interest in that regard which you can conveniently communicate to me?"

The decreased importance to American vessels of the inshore Canadian fisheries has resulted—

(1) From the increased size of our vessels, which did away with the necessity of fishing close to land, where harbor could be made in case of storms, and of landing in the vicinity of the fishing grounds to dry their fish before sailing for home;

(2) From the substitution of the purse-seine for the hand-lines in the capture of mackerel, which has necessitated the fishing in deeper water and at a greater distance from shore; and

(3) From the change in the location of the mackerel fisheries, which has for the past few years enabled our vessels to obtain full cargoes in the vicinity of our own

coast, instead of going to the Gulf of St. Lawrence, where they formerly met with better success, but where of late years—prior to the present season—they have found fishing unsatisfactory.

This recent return of the mackerel to the more northern waters should, however, not be considered as indicating a permanent change in the location of the fishery, for within a short time, and possibly next season, they may again appear in greater abundance on our own coast; and, indeed, the study of the movements of other fishes renders it not wholly improbable that mackerel may at no distant day disappear entirely from the Gulf of St. Lawrence and from other portions of the Provincial shores, where they are now abundant.

No. 4.

J. R. L.]

TREASURY DEPARTMENT, December 30, 1886.

SIR: In reply to your request of the 28th instant, in which you desire to be informed of "the value of merchandise sent during the last fiscal year *in bond*—(1) through any port of the United States to the British North American Provinces; (2) of merchandise sent in bond from one of our ports to another over territory of the British North American Provinces; or (3) sent in bond through any of those Provinces to the United States," I have the honor to report:

(1) That the statistics, compiled for the last fiscal year, show the transit of dutiable merchandise to British North American Provinces amounting in value to..... \$18,556,763
And also of non-dutiable merchandise amounting to..... 1,684,316

Making a total of 20,241,079

This represents merchandise arriving at United States seaports *en route* to Canada, and also merchandise arriving at frontier ports for shipment across the territory of the United States to other frontier ports.

The report of the Bureau of Statistics shows \$20,241,079 worth of "transit" merchandise shipped to British American Provinces, and besides \$10,861,020 worth of "in transit" merchandise received *from* the British American Provinces. What proportion of the latter amount was simply transported across United States territory to another Canadian port does not appear. It is probable, though, that the greater portion of it was transported to our seaports for shipment to foreign countries.

In reply to your second and third questions, I have to state that in the absence of any data to be found in the records of the Department the annexed telegram was sent to the collectors at the various frontier ports therein named, and from their replies it appears that no sufficient records of such matters have been kept to enable them to give satisfactory reports in all cases.

The collectors at Portland and Suspension Bridge alone give any values in response to the second interrogatory (*viz.*, \$960,284 at Portland, and \$1,414 at Suspension Bridge), while the collectors at Suspension Bridge and Burlington are the only ones failing to report as to the third question, the others reporting as follows:

Plattsburg	\$37,498
Portland	1,899
Detroit	175,026
Buffalo	472
Port Huron	1,194,000
Total	1,408,895

I may state, however, in explanation of the incompleteness of these reports, that under the regulations of the Department, merchandise of domestic origin, and imported merchandise in bond in transit from one port in the United States to another by bonded routes through the Dominion of Canada, are allowed to go forward in sealed cars without special bond or any record of values being kept, and on arrival at the second port, if the seals are found intact and the provisions of the regulations in other respects have been duly complied with, are permitted to go forward to final destination without hinderance, no record of values being deemed necessary at that port or any further formality than the due inspection of the seals and comparison of the contents of the cars with the manifests.

Respecting merchandise covered by your third inquiry, that is, sent in bond through any of the British Provinces to the United States, it would appear that the customs officials at the frontier ports can have but little means of ascertaining how the mer-

chandise passed through the foreign territory; their duties commencing with the arrival of the goods at their several ports. I suggest, therefore, that their telegraphic replies, made at such short notice, be accepted with caution, although no reason is known at this time for doubting their accuracy.

Very respectfully,

J. G. MACGREGOR,
Chief Customs Division.

The SECRETARY OF THE TREASURY.

No. 5.

TREASURY DEPARTMENT, BUREAU OF STATISTICS,
Washington, D. C., January 7, 1887.

Hon. DANIEL MANNING,
Secretary of the Treasury.

SIR: In reply to yours of the 28th ultimo, I have the honor to forward to you tables showing the quantities and values of foreign-caught fish imported into the United States from the British North American Possessions, other than British Colombia; also showing the quantities and values of the fish brought into each port of the United States in American and foreign vessels, respectively.

Table No. 1 shows such imports of fish in American vessels and in foreign vessels, respectively.

Table No. 2 shows the aggregate imports of each kind of fish brought by all means of transportation, to-wit: in American vessels, in foreign vessels, and in cars.

From these tables it appears that the value of fish imported into the United States from the British North American possessions, other than British Colombia, was as follows:

In foreign vessels:	
Into northern border districts	\$89,654
Into Atlantic districts.....	1,093,820
Total in foreign vessels.....	<u>1,183,474</u>
In American vessels:	
Into northern border districts	155,481
Into Atlantic districts.....	353,210
Total in American vessels	<u>508,691</u>
Total in American and foreign vessels	1,692,165
Brought in cars	482,577
Grand total.....	<u>2,174,742</u>

Very respectfully,

WM F. SWITZLER,
Chief of Bureau

No. 1.—Statement showing the quantities and values of fish imported into the United States and American Vessels, respectively,

[IMPORTED IN FOREIGN VESSELS.

Customs districts.	FREE OF DUTY.						
	Fresh.				Lob- sters, canned or pre- served.	All other.	Total free of duty.
	Salmon.		All other.				
	Pounds.	Dollars.	Pounds.	Dollars.	Dollars.	Dollars.	Dollars.
NORTHERN BORDER DISTRICTS.							
Cape Vincent, N. Y			1, 073, 400	42, 966			42, 966
Chicago, Ill							
Detroit, Mich			19, 715	286			286
Duluth, Minn			539, 000	1, 352			1, 352
Genesee, N. Y			140, 955	5, 950			5, 950
Huron, Mich			118, 995	2, 984	1, 650		4, 634
Miami, Ohio							
Michigan, Mich			230, 598	5, 298			5, 298
Oswegatchie, N. Y							
Oswego, N. Y			500	20			20
Superior, Mich			118, 500	2, 900			2, 900
Total			1, 741, 663	61, 756	1, 650		63, 406
ATLANTIC DISTRICTS.							
Baltimore, Md							
Barnstable, Mass							
Boston and Charlestown, Mass	44, 555	6, 936	943, 011	16, 989	26, 809	29, 472	80, 206
Gloucester, Mass			498, 000	2, 614			2, 614
Machias, Me			1, 200	50			50
Marblehead, Mass							
Newburyport, Mass							
New York, N. Y	100	10	703, 099	10, 232	64, 011	2, 243	76, 496
Passamaquoddy, Me	733, 942	72, 590	606, 354	14, 928	14, 147	2, 754	104, 419
Philadelphia, Pa							
Portland and Falmouth, Me					97, 847	3, 804	101, 651
Portsmouth, N. H			40, 000	480			480
Richmond, Va							
Waldoboro', Me			3, 518	103		1, 033	1, 136
Newark, Salem, Saint Johns, and Belfast						200	200
Total	778, 597	79, 536	2, 795, 182	45, 396	202, 814	39, 506	367, 252
Aggregate	778, 597	79, 536	4, 536, 845	107, 152	204, 464	39, 506	430, 658

IMPORTED IN AMERICAN VESSELS.

NORTHERN BORDER DISTRICTS.							
Chicago, Ill							
Cuyahoga, Ohio			169, 821	1, 841			1, 841
Detroit, Mich			1, 817, 366	48, 130			48, 130
Duluth, Minn			240, 730	6, 766			6, 766
Huron, Mich			78, 600	1, 868			1, 868
Oswegatchie, N. Y			43, 686	1, 473			1, 473
Oswego, N. Y			26, 500	1, 467			1, 467
Superior, Mich			992, 881	24, 025			24, 025
Sandusky, Ohio			2, 116, 000	19, 392			19, 392
Total			5, 485, 584	104, 962			104, 962
ATLANTIC DISTRICTS.							
Baltimore, Md							
Boston and Charlestown, Mass	76, 400	6, 903	295, 474	6, 831	113, 580	21, 603	148, 917
Gloucester, Mass			115, 000	5, 818			5, 818
Machias, Me							
New York, N. Y			75, 000	1, 100	16, 557		17, 657
Portland and Falmouth, Me			70, 150	1, 127			1, 127
Passamaquoddy, Me	104, 848	10, 370	86, 622	2, 132	2, 021	393	14, 916
Philadelphia, Pa			100, 000	755			755
Total	181, 248	17, 273	742, 246	17, 763	132, 158	21, 996	189, 190
Aggregate	181, 248	17, 273	6, 227, 830	122, 725	132, 158	21, 996	294, 152
Total foreign and American vessels ..	959, 845	96, 809	10, 764, 675	229, 877	336, 622	61, 502	724, 810

from the British North American Possessions, other than British Columbia, in Foreign during the year ending June 30, 1886.

IMPORTED IN FOREIGN VESSELS.

DUTIABLE.													Aggregate.
Cod, haddock, hake, and pollock, dried, smoked, or pickled.		Herring.				Mackerel, pickled.		Salmon, pickled.		All other.	Total dutiable.		
		Dried or smoked.		Pickled or salted.									
Pounds.	Dollars.	Pounds.	Dolls.	Bbls.	Dolls.	Bbls.	Dolls.	Bbls.	Dolls.	Dolls.	Dolls.	Dollars.	
15,000	563			86	359	412	3,934			666	666	43,632	
				110	548						4,856	4,856	
										34	582	868	
										212	212	1,564	
												5,950	
6,000	180	65,560	1,457	1,436	3,976	455	2,389			10,603	18,605	23,239	
		2,151	98								98	98	
				17	70					25	25	5,323	
										20	90	90	
												20	
										1,114	1,114	4,014	
21,000	743	67,711	1,555	1,649	4,953	867	6,323			12,674	26,248	89,654	
		348	6	619	1,989	10	50	15	134		2,179	2,179	
246,400	5,063										5,063	5,063	
5,067,632	119,769	2,361,715	50,332	23,108	79,334	20,415	123,397	1,380	16,340	9,912	399,084	479,290	
												2,614	
672	6										6	56	
		300	6								6	6	
948	20					3	15			21	56	56	
3,951,245	131,630	316,523	5,559	10,207	26,276	12,542	54,228	2,149	21,581	14,043	253,317	329,813	
680,100	12,502	1,950,779	23,939	683	1,539	1,044	8,085	81	933	10,759	57,757	162,176	
						45	225				225	225	
				1,615	5,102						5,102	106,753	
		400	4								4	484	
						2,485	3,700				3,700	3,700	
322	3										3	1,139	
836	29										37	266	
9,948,155	269,022	4,630,065	79,846	36,232	114,240	36,544	189,700	3,625	38,988	34,772	726,568	1,093,820	
9,969,155	269,765	4,697,776	81,401	37,881	119,193	37,411	196,023	3,625	38,988	47,446	752,816	1,183,474	

IMPORTED IN AMERICAN VESSELS.

36,680	1,038			1,265	5,258	216	930			45	7,271	7,271	
				401	1,162							1,841	
										32,979	34,141	82,271	
										145	145	6,911	
										665	665	2,533	
30	2										2	1,475	
												1,467	
										289	289	24,314	
		545,260	2,768							5,238	8,006	27,398	
36,710	1,040	545,260	2,768	1,666	6,420	216	930			39,361	50,519	155,481	
				1,088	3,299						3,299	3,299	
156,103	4,058	74,710	902	2,669	8,056	10,595	63,409	398	4,285	10,059	90,769	239,686	
2,129,093	34,808	55,980	1,271	236	957						37,036	42,854	
1,232	13										13	13	
166,232	5,564			270	1,075	20	80				6,719	24,376	
863,470	16,553										16,553	17,680	
113,342	2,084	325,129	3,939	113	257	174	1,348	14	155	1,798	9,631	24,547	
												755	
3,429,472	63,080	455,819	6,162	4,376	13,644	10,789	64,837	412	4,440	11,857	164,020	353,210	
3,466,182	64,120	1,001,079	8,930	6,042	20,064	11,005	65,767	412	4,440	51,218	214,539	508,691	
13,435,437	333,885	5,698,855	90,331	43,923	139,257	48,416	261,790	4,037	42,428	98,664	967,355	1,692,165	

No. 2.—Statement showing the quantities and values of foreign fish imported into the United States the year ending

Customs districts.	FREE OF DUTY.						
	Fresh fish.				Lob- sters, canned or pre- served.	All other.	Total free of duty.
	Salmon.		All other.				
NORTHERN BORDER DISTRICTS.	Pounds.	Dolls.	Pounds.	Dolls.	Dolls.	Dolls.	Dolls.
Aroostook, Me.....	1,711	177	24,800	178			355
Buffalo Creek, N. Y.....			3,903,533	128,379			128,379
Cape Vincent, N. Y.....			1,063,400	42,966			42,966
Champlain, N. Y.....	276,871	28,128	320,781	18,127			46,255
Chicago, Ill.....					1,887		1,887
Cuyahoga, Ohio.....	19,800	198	150,011	1,643			1,841
Detroit, Mich.....			1,902,089	55,011	180		55,191
Duluth, Mich.....			279,728	8,118			8,118
Genesee, N. Y.....			147,295	5,950			5,950
Huron, Mich.....			252,018	6,427	1,650		8,077
Miami, Ohio.....			2,151	98			98
Michigan, Mich.....			230,598	5,298			5,298
Minnesota, Minn.....			449,083	15,404			15,404
Niagara, N. Y.....			147,850	5,914			5,914
Oswegatchie, N. Y.....			43,686	1,473			1,473
Oswego, N. Y.....			36,905	1,487			1,487
Sandusky, Ohio.....			2,115,999	19,391			19,391
Superior, Mich.....			1,111,081	26,924			26,924
Vermont, Vt.....	7,016	890	127,411	10,335	67		11,292
Total	305,398	29,393	12,308,419	353,123	3,784		386,300
ATLANTIC DISTRICTS.							
Baltimore, Md.....							
Bangor, Me.....	157,476	18,587	3,583,540	108,660	226	167	127,640
Barnstable, Mass.....							
Belfast, Me.....						200	200
Boston and Charlestown, Mass.....	120,956	13,839	1,238,485	23,820	140,389	51,075	229,123
Gloucester, Mass.....			915,050	9,241			9,241
Machias, Me.....			1,200	50			50
Marblehead, Mass.....							
Newark, N. J.....							
Newburyport, Mass.....							
New York, N. Y.....	100	10	778,099	11,332	80,568	2,243	94,153
Passamaquoddy, Me.....	838,790	82,960	692,976	17,060	16,168	3,147	119,335
Philadelphia, Pa.....			100,000	755			755
Portland and Falmouth, Me.....			70,150	1,127	97,847	3,804	102,778
Portsmouth, N. H.....			40,000	480			480
Richmond, Va.....							
Salem and Beverly, Mass.....							
Saint John's, Fla.....							
Waldoboro', Me.....			3,518	103		1,033	1,136
Total	1,117,322	115,396	7,423,018	172,628	335,198	61,669	684,891
Aggregate.....	1,422,720	144,789	19,731,437	525,751	338,982	61,669	1,071,191

States from the British North American Possessions, other than British Columbia, during June 30, 1886.

DUTIABLE.													Aggregate.
Cod, haddock, hake, and pollock, dried, smoked, or pickled.		Herring.				Mackerel, pickled.		Salmon, pickled.		All other.	Total dutiable.		
		Dried or smoked.		Pickled or salted.									
Pounds.	Dolls.	Pounds.	Dolls.	Bbls.	Dolls.	Bbls.	Dolls.	Bbls.	Dolls.	Dolls.	Dolls.	Dolls.	
2,400	113	1,690	30	116	355	1	12			30	540	895	
										9,910	9,910	138,289	
				1	5					661	666	43,632	
				44	177			2	12	591	780	47,035	
		60,057	1,465	8,473	31,511	738	6,441			1,386	40,803	42,690	
												1,841	
				522	1,792					36,657	38,449	93,640	
										357	357	8,475	
												5,950	
6,000	180			505	1,648	50	175			15,692	17,695	25,772	
												98	
										25	25	5,323	
170	7									24,258	24,265	39,669	
										661	661	7,575	
240	18			18	74						92	1,565	
												1,487	
				368	762					7,245	8,007	27,398	
										1,403	1,403	28,327	
200	16	23,500	418	15	68	53	186	389	3,714	764	5,166	16,458	
9,010	334	85,247	1,913	10,062	36,392	842	6,814	391	3,726	99,640	148,819	535,119	
		341,748	5,294			10	50	15	134		5,478	5,478	
648	15	208,626	3,613	4	17	3,645	30,952	104	1,418	9,437	45,452	173,092	
246,400	5,063										5,063	5,063	
												200	
5,223,735	123,827	2,436,425	51,234	25,777	87,390	32,612	206,307	1,778	20,625	19,971	509,354	738,477	
2,241,460	36,227										36,227	45,468	
1,904	19										19	69	
				2	6						6	6	
											4	4	
											56	56	
4,117,477	137,194	316,523	5,559	10,477	27,331	12,562	54,308	2,149	21,581	14,063	260,036	354,189	
793,442	14,586	2,275,908	27,928	796	1,796	1,218	9,433	95	1,088	12,557	67,388	186,723	
				45	225						225	980	
863,470	16,553			1,615	5,102						21,655	124,433	
		400	4								4	484	
				2,485	3,700						3,700	3,700	
836	29										6	35	
											27	27	
											3	1,139	
13,489,372	333,513	5,579,630	93,632	41,201	125,567	50,047	301,050	4,141	44,846	56,124	954,732	1,639,623	
13,498,382	333,847	5,664,877	95,545	51,263	161,959	50,889	307,864	4,532	48,572	155,764	1,103,551	2,174,742	

WILLIAM F. SWITZLER,
Chief of Bureau.

TREASURY DEPARTMENT, BUREAU OF STATISTICS,
January 7, 1886.

H. Ex. 20—85

